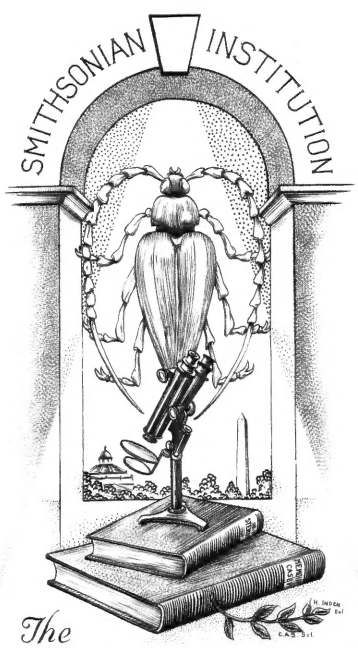

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BIOLOGIA CENTRALI-AMERICANA.

INSECTA.

COLEOPTERA. VOL. II. PART 2.

PECTINICORNIA AND LAMELLICORNIA.

BY

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INTRODUCTION.

THE present volume of the Coleoptera section of the Central-American fauna deals with the two allied Tribes Pectinicornia and Lamellicornia, well-defined groups which include many of the largest and most striking forms of the order. The genera representing the two tribes were placed by Linnæus and other early systematists, apparently under a vague, but not less true, sense of their superior organization, at the head of the whole Coleopterous series, a position from which they have since been deposed in favour of the less specialized Cicindelidæ and allied groups of the Adephaga. The higher specialization of the Lamellicornia is clearly shown in the tendency they display to consolidation of parts of their external structure, especially the mouth-organs, the ligula with the mentum, and the labrum with the clypeus or epistome, and still more clearly in the concentration and reduction in number of the ganglia of the nervous system.

The two tribes were considered as forming one only by the eminent specialists Erichson and Burmeister, and were separated by Lacordaire in his classical 'Genera des Coléoptères,' in 1856, chiefly on the ground of the immobility of the antennal lamellæ, the same being movable like the leaves of a book in the more highly organized Lamellicornia. This constant difference is, however, supplemented by many other important and significant characters, which, though constant within subordinate groups of each respectively, do not apply to the whole tribe and are therefore of minor systematic value, though indicating sufficiently distinct tribal types of form and lines of development.

With regard to the contents and relations of the Central-American fauna of Pectinicornia and Lamellicornia, the two tribes present such different aspects that they must be considered separately.

In Pectinicornia our fauna is exceedingly poor in the chief family of the tribe, viz. the Lucanidæ, but, on the other hand, exceedingly rich in the other and more aberrant

family, the Passalidæ. Of Lucanidæ we are able to record only 5 species of 3 genera, whilst in Passalidæ we have 67 species of 27 genera. A comparison with such allied faunas in other parts of the world as have been worked out sufficiently to promise approximately accurate results, seems to show that the poverty in Lucanidæ arises from Central America lying too far south in the continent to have been reached by many species of Old-World genera, which in America extend no further south than the temperate zone, and too far north for the genera characteristic of South Brazil, Chili, and the Andes. The conditions seem, however, to be very favourable to the Passalidæ, which here reach their highest development and exhibit more diversity of form than in any other region. Other faunas show the following proportions:—North America (Henshaw's Catalogue, 1885, and Suppl. 1887) possesses of Lucanidæ 14 species of 5 genera, and Passalidæ 1 species of 1 genus; Brazil (Gemminger and Harold's Catalogue, 1868), Lucanidæ 22 species of 6 genera, Passalidæ 25 species of 16 genera. The Colombian subprovince probably approaches our fauna nearer in its proportions of the two families; but the data for an approximate enumeration, in this case, are not at hand. In the tropical regions of the Old World the predominance of the Lucanidæ is everywhere strongly marked. In the islands of the Malay Archipelago there are upwards of 80 species of Lucanidæ of a dozen genera, and only about 27 Passalidæ of 6 genera.

The Lamellicornia are well represented in Central America in all their families. In the following pages we are able to record the large total of 1028 species contained in 127 genera. This is about one-tenth of the number described to the present date from all parts of the world, which I find, on a rough enumeration, to be very nearly 10,000. On comparing this proportion with those of the previously completed tribes in the present work, we find that it is rather greater than in the Geodephaga, where the numbers are 1086 : 12,000, and much less than in the Longicornia, of which Central America possesses 1273 species out of the total number described, viz. 8968. A comparison of the Lamellicorn fauna with that of other tropical regions of similar extent is impossible, as the necessary data do not exist in a connected form: we cannot say therefore whether our fauna is exceptionally rich for a tropical region; but as compared with temperate regions, *e. g.* Europe and North America, it is certainly very much richer than either. Of Lamellicornia Europe possesses only 636 species of 71 genera and North America 523 of 75 genera. In the less tropical tribe of Geodephaga the proportion is nearly reversed, our region furnishing only 1086 species, as compared with 1750 and 1223 for Europe and North America respectively; on the other hand, in the more tropical tribe of Longicornia Central America shows a still more decided superiority,

the number of species being 1273, whilst for North America (Henshaw's Catalogue) it is 579, and for Europe (with the Caucasus), according to the latest edition of Heyden, Reitter, and Weise's Catalogue, only 473 species.

The material for the present volume has been relatively richer than that for the former volumes on the Geodephaga and Longicornia, for in addition to that obtained by the four years' labours of Mr. Champion, and the fine collections of M. Sallé, Herr Höge, Herr Van Patten, Mr. Belt, and others mentioned in a previous Introduction, it includes a very large collection, a portion of the fruit of Herr Höge's second journey to Mexico, and another, rich in new and interesting forms, obtained by Mr. and Mrs. H. H. Smith during their recent journey, in which they visited parts of Mexico not previously explored. Many new species have also been obtained from Herr Conradt and from Dr. Gaumer, who collected in Guatemala and in Yucatan respectively. Mr. Flohr has also sent us specimens of many new species, some of the most remarkable of which were collected in the Sierra Madre of Durango.

The total number of species enumerated in the present volume is 1100: 494 new species (Pectinicornia 23 and Lamellicornia 471) and 19 new genera (Pectinicornia 4 and Lamellicornia 15) are described.

Of the 1028 species of Lamellicornia, 107 are left unnamed from want of sufficient material, such species being represented by single specimens only, often imperfect, which, in this family, where the sexual differences and degrees of development are so important, cannot afford reliable specific characters; these unnamed species chiefly belong to *Lachnosterna* (36), *Anomala* (24), and *Diplotaxis* (13). 492 species are figured (Pectinicornia 18 and Lamellicornia 474).

H. W. B.

January 1890.

ERRATA ET CORRIGENDA.

Page	Line	
112	22	for *C.* read *G.*
120	31	for *A.* read *C.*
177	34	after *connate* insert *in the male*
191	20	for *puncticolli* read *punctulicolli*
196	2	after *connate* insert *in the male*
279	19	*for* female *read* male
406	24	for *a.* read *A.*
414	11	*for* 346 *read* 345

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* This is erroneously marked as a ♂ on the Plate.

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* *Gymnetis kerremansi* on the Plate.

† *Chlorizanthe flavipennis* on the Plate.

BIOLOGIA CENTRALI-AMERICANA.

ZOOLOGIA.

Class INSECTA.

Order COLEOPTERA.

Tribe PECTINICORNIA.

Fam. LUCANIDÆ.

CANTHAROLETHRUS.

Cantharolethrus, Thomson, Ann. Soc. Ent. Fr. 1862, p. 411.

Three, perhaps four, closely allied species of this beautiful and peculiar genus of stag-beetles are known, all from Colombia or Ecuador. One of the Colombian species extends its range into the domain of our Fauna, and is remarkable as being, with the exception of two small *Æsali*, the only form known to inhabit Central America of the conspicuous Family of Lucanidæ, so numerously represented in all other tropical and subtropical regions.

1. Cantharolethrus luxerii. (Tab. I. figg. 1 ♂, 2 ♀.)

Dorcus luxerii, Buquet, Ann. Soc. Ent. Fr. 1843, Bull. p. li [1].

Cantharolethrus luxerii, Parry, Trans. Ent. Soc. 3 Ser. II. p. 6, t. 9. f. 6; id. ibid. 1872, p. 76 (♂); C. O. Waterhouse, Cistula Entomologica, I. p. 365 (♀)[2].

Cantharolethrus georgius, Thomson, Ann. Soc. Ent. Fr. 1862, p. 412 (♂)[3].

Hab. Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 3000 feet (*Champion*). —South America, Colombia [1 2 3].

Four examples, viz. two males from Costa Rica, and two females from Chiriqui. The largest of the two males measures 50 millim. and one of the females 33 millim.

The examples obtained by Mr. Champion were both found crawling on tree-trunks, in the dense forest bordering the upper margins of the coffee plantations in the district known as "Las Potrerillas," situate on the south-east slope of the Volcan de Chiriqui.

ÆSALUS.

Æsalus, Fabricius, Syst. Eleuth. ii. p. 274; Lacordaire, Genera des Coléopt. iii. p. 42.

Three species of *Æsalus* have been recorded, one European, one Japanese, and one from Mexico.

1. **Æsalus trogoides.**

Æsalus trogoides, Albers, Deutsche ent. Zeit. 1883, p. 228 [1].

Hab. Mexico, Oaxaca [1].

As no mention is made of an ocular canthus, this species appears to be a typical *Æsalus*. It is much larger (6 millim.) than *Æ. neotropicalis*, and also differs in colour and in the form of the prosternum.

2. **Æsalus neotropicalis.** (Tab. I. figg. 3, 3 *a*.)

Oblongo-ovatus, sordide fuscus, antennis pedibusque rufioribus; supra breviter sat dense erecte setosus, opacus, grosse discrete punctatus; clypeo vix arcuato, oculis cantho angusto setifero dimidio divisis; thorace fere sicut in *Æ. scarabæoïde*; elytris interstitiis paullo convexis, setis plerumque in striis sitis; tibiis anticis et intermediis extus denticulatis dentibusque acutis elongatis tribus, 1° apicali recte exstanti, alteris duobus medianis; prosterno plano, nec elevato.

Long. 4 millim.

Hab. Guatemala, near the city, Zapote, Capetillo (*Champion*).

Differs from the type of the genus, and all other members of the subfamily to which it belongs, in the eyes being divided (for half their width) by a canthus. The canthus is linear, convex, and studded with short blunt erect setæ like the rest of the surface. The antennæ are very similar; but the joints 6 and 7 are excessively short and acutely produced on their inner side. The mesosternum, as in the type, forms a subvertical plate on the front face of an intercoxal process of the metasternum, and is broadly excavated to receive the point of the prosternum; the latter is not elevated as in *Æ. scarabæoides*, but planed to the level of the anterior coxæ.

Many examples, obtained by beating the withered leaves and boughs of fallen forest trees.

Fam. PASSALIDÆ.

The latest monographer of this family, Dr. Kaup, in 1871 (Monogr. der Passaliden, Berlin Ent. Zeitschr. xv.), formulated an elaborate classification, which, as it was founded on abundant material, and of course applied to the *Passalidæ* of the whole world, I would willingly have adopted, as the most convenient course in dealing with a limited fauna; but a careful examination has shown the classification to be so arbitrary and inapplicable that I have been compelled to reject it. How far the inconsistencies may be due to the quinary method which Kaup adopted it is unnecessary to inquire, but the necessity of making up the number five in the species of each genus, the genera of

each subfamily, and so forth, is certainly accountable for some of the errors. The Passalidæ of the New World, instead of forming three out of the five subfamilies into which Kaup divided the family, seem to me to belong essentially all to one type of form, with very great diversity of minor characters, but no important differences of structure. The minor differences afford tolerably trustworthy characters for the formation of small generic groups of which Kaup established a large number, and in adopting most of these I have been obliged to institute numerous others on the same class of modifications, chiefly the ridges and armature of the head. I have grouped the genera into two sections, characterized by the form of the base of the elytra and the relative length of these organs, or the hinder body, with regard to the thorax. For convenience of reference and comparison I have adhered pretty closely to Kaup's sequence of the genera, although it violates to some extent their natural affinities.

Section I. *Elytra relatively short, more or less protuberant in the middle of the base.*

A. *Antennal leaflets very long.*

PROCULUS.

Proculus, Kaup, Harold's Col. Hefte, iv. p. 8 (1868); id. Monogr. der Passaliden, p. 65 (1871).

Three species of this fine genus, the giants of the family, are at present known. They appear to be restricted to Guatemala and the adjoining region of British Honduras.

In Guatemala *P. goryi* is confined to the Pacific slope, and found at elevations of from 1000 to 5000 feet; *P. opacipennis* and *P. mniszechi* to the Atlantic slope, and to the humid forest region of Alta Vera Paz, at elevations of from 3000 to 5000 feet; examples of the last-named species were only met with sparingly in various localities in this district by Mr. Champion, who, at the time not possessing means of preserving such large insects in a very humid climate, was unable to retain examples.

Decaying specimens of these and other Passalidæ occasionally harbour rare Staphylinidæ.

1. **Proculus goryi.**

Passalus goryi, Melly, Guér. Mag. Zool. 1833, t. 56[1].
Proculus goryi, Kaup, Monogr. der Passal. p. 66, t. 5. f. 1[2].

Hab. GUATEMALA [1 2], Pantaleon, Las Mercedes, Las Nubes above Mazatenango (*Champion*), Costa Cuca (*Sarg.*).

This species was obtained plentifully by Mr. Champion in the coffee estate of Las Nubes and elsewhere along the Pacific slope, by employing the Indians to turn over the fallen trunks of the largest forest trees, in the decaying wood on the under side of which the insect passes its earlier stages.

2. **Proculus opacipennis.**

Passalus opacipennis, Thomson, Archiv Ent. i. p. 420, t. 21. f. 4[1].
Proculus opacipennis, Kaup, Monogr. der Passal. p. 68, t. 5. f. 3.

Hab. Guatemala [1], Coban, Senahu (*Champion*).

3. **Proculus mniszechi.**

Passalus goryi, Thomson, Archiv Ent. i. p. 421 (nec Melly) [1].
Proculus mniszechi, Kaup, Harold's Col. Hefte, iv. p. 11 ; id. Monogr. der Passal. p. 67, t. 5. f. 2[2].

Hab. British Honduras, R. Sarstoon (*Blancaneaux*) ; Guatemala [1 2] (*Sallé*), Sabo, Tactic, and elsewhere in Alta Vera Paz (*Champion*).

B. *Antennal leaflets moderately elongated.*

PROCULEJUS.

Proculejus, Kaup, Monogr. der Passal. p. 60.

Kaup gives the antennal leaflets as "short." They are certainly much shorter than in *Proculus*, but not so short as in the restricted genus *Passalus* and its allies. The first and second leaflets are more than twice the length of the body of the joints, and the third leaflet is moderately slender.

The leaflets have an extremely finely-shagreened sensitive surface and short pubescence ; in *Proculus* the surface is sparsely punctured and shining, and the pubescence very long.

Five species have been described, four from Mexico and one from Ecuador.

§ 1. *Marginal interstices of the elytra more or less punctulate and hairy.*

1. **Proculejus brevis.**

Passalus brevis, Truqui, Rev. & Mag. Zool. 1857, p. 263[1].
? *Proculejus brevis,* Kaup, Monogr. der Passal. p. 61[2].

Hab. Mexico [1], Jacale (*Sallé*), Jalapa (*Höge*), Mirador [2] (*Dr. Sartorius*).

Kaup's *P. brevis* is cited with doubt, as he says the mandibles have *three* apical teeth. M. Sallé's specimens from Jacale, the locality whence came M. Truqui's types, have only two apical teeth.

2. **Proculejus hirtus.**

Passalus hirtus, Truqui, Rev. & Mag. Zool. 1857, p. 264[1].
Proculejus hirtus, Kaup, Monogr. der Passal. p. 62[2].

Hab. Mexico [1] (*Sallé*), Huachinango [2] (*coll. Mniszech*).

3. **Proculejus truquii.**

Proculejus truquii, Kaup, Harold's Col. Hefte, iv. p. 16; id. Monogr. der Passal. p. 62[1].

Hab. Mexico[1] (*coll. Mniszech*).

4. **Proculejus sartorii.**

Proculejus sartorii, Kaup, Harold's Col. Hefte, iv. p. 17; id. Monogr. der Passal. p. 64[1].

Hab. Mexico, Mirador[1] (*Dr. Sartorius*), Oaxaca (var. ?, *Sallé*).

A specimen in the Sallé collection agrees well with Kaup's description, especially in the flattened surface of the thorax and elytra and the bidentate apex of the mandibles. It differs, however, in the much less extent of the punctulate and hairy lateral interstices of the elytra, the basal portion of the tenth interstice only being so sculptured and clothed. Kaup describes *P. sartorii* as having the second, third, and fourth marginal (*i. e.* eighth, ninth, and tenth from the suture) interstices punctulate throughout.

5. **Proculejus pubicostis.** (Tab. I. figg. 4, 4*a*.)

Breviter oblongus; verticis cornu elongato antice libero et paullulum elevato, apud basin utrinque tuberculo subrotundato; carinis frontalibus vix acutis divaricatis usque clypei tuberculum lateralem extensis ibique tuberculatis; clypeo acute marginato, fronte lævissima; thorace sicut in *P. brevi*, sulculis marginalibus passim angustis, punctatis, foveaque laterali punctulato-pubescenti; elytris relative quam in hac specie brevioribus, sed antice medio paullo minus prominentibus, sulcatis, sulcis subtilius punctulatis; interstitiis 1°–6^{m} latis, planis, 7° angustiori, glabro, 8°–10^{m} punctulato-pubescentibus, 9° angusto subcarinato; tibiis 4 posticis extus absque spinis.

Long. 28 millim.; thorax 8, elytra 15 millim. long.

Hab. Mexico, Orizaba (*Sallé*). One example.

Named *P. mexicanus*, Truqui, in the Sallé collection, but evidently in error as it does not at all agree with Truqui's description. The antennal club has three moderately long, thin leaflets, as in the other species of *Proculejus*.

This species differs from the others of this section in the tubercle of the vertex being prolonged into a long, horizontal, laterally subcompressed horn, and in the frontal carinæ being widely divergent and ending in a tubercle very close to a similar clypeal tubercle over the base of the mandibles. As it resembles in all other characters *P. brevis*, the modification in the armature of the head can scarcely be taken as a generic character.

§ 2. *Elytra entirely glabrous.*

6. **Proculejus championi.** (Tab. I. figg. 5, 5*a*.)

Breviter oblongus, elytris subovatis, convexus, niger politus; clypeo lato, carinaque antice et postice sulco lævi marginata; tuberculo verticis parum elevato, compresso-conico, postice late sulcato, apice declivi carinisque frontalibus brevibus divergentibus utrinque in tuberculum validum longe ante clypeum terminatis; man-

dibulis apice bidentatis; thorace relative magno, sulco marginali undique lævi, antice intus dilatato; elytris profunde striatis, striis fundo punctulatis, interstitiis omnibus æqualibus.
Long. 30 millim.; thorax 9, elytra 18 millim. long.

Hab. GUATEMALA, Purula in Vera Paz 4000 feet (*Champion*).

Very similar to *P. brevis*, Truqui, in all its proportions and in the sculpture of the head, the only differences in the latter being that the frontal carinæ terminate long before the sulcus which limits the clypeus; the horn or tubercle of the vertex is broadly sulcate behind and the depressed areæ are much smoother. The thorax differs in the dilated sulcus on the anterior margin and the perfectly smooth lateral fovea. The antennal club has the leaflets moderately elongated and minutely sculptured in both species, and the lobes of the mentum are very coarsely punctured and hairy. The elytra in both are almost angularly prominent in the middle of the base, and the basal edge runs obliquely backwards to the rectangular shoulders. The mesosternum is glabrous and impunctate; the flanks of the thorax densely hairy. The legs have only a few hairs; the middle tibiæ two strong spines, the hinder tibiæ only one.

Although Kaup gives the punctulate-hairy sides of the elytra as one of the chief characters of the genus, he admits one species (*P. quitensis*) which has glabrous sides; this may be included in the same section as *P. championi*, although it differs in some important particulars.

Several examples, found in the dense humid forest.

OILEUS.

Oileus, Kaup, Monogr. der Passal. p. 58; id. ibid. p. 117.

Differs from *Proculejus* in the tubercle of the head being developed into a long horizontal horn, with a free tip projecting beyond the edge of the clypeus, and in the obsolete frontal carinæ. The sole species is much larger than the *Proculeji*, and differs from them in the slightly impressed elytral striæ. The elytra are relatively longer, but have the same prominence in the middle of the base and rather more obtuse shoulders.

Kaup founded his genus *Oileus* in his Prodromus (Harold's Col. Hefte, v.) on a miscellaneous set of species four in number, which he subsequently, in his monograph, separated into three genera with new names, transferring the name *Oileus* to a species which was not included in the original genus. It is perhaps expedient to overlook this irregularity, as a shifting of the names again, according to the rules of nomenclature, would only tend to increase the confusion.

1. **Oileus heros.** (Tab. I. figg. 6, 6*a*.)

Passalus heros, Truqui, Rev. & Mag. Zool. 1857, p. 262.
Oileus heros, Kaup, Monogr. der Passal. p. 58 [1].

Hab. MEXICO, Huachinango [1] (*Truqui, type in coll. Sallé*).

OXYGES.

Oxyges, Kaup, Monogr. der Passal. p. 69.

Kaup refers the following two species to this genus.

1. **Oxyges lævissimus.** (Tab. I. figg. 7, 7*a*.)

Proculejus lævissimus, Kaup, Harold's Col. Hefte, iv. p. 15.
Oxyges lævissimus, Kaup, Monogr. der Passal. p. 69[1].

Hab. Guatemala (*Wagner*[1], *Sallé*).

2. **Oxyges lævior.**

Oxyges lævior, Kaup, Monogr. der Passal. p. 70[1].

Hab. ?Guatemala (*Wagner*[1]).

PROSOCLITUS.

Gen. *Proculejo* affinis, sed elytris relative longioribus humerisque magis rotundatis. Clypeus flexuosus absque tuberculis; frons valde inæqualis, medio longitudinaliter usque ad clypei sulcum sulcata; cornu verticis latum, basi utrinque tuberculo alæformi valido, apice liberum, ante apicem cum carinis frontalibus obtusis confusum, his subrecte usque carinam oculorum extensis. Thorax convexus; sulculo marginali punctato, antice intus sat elongato vix dilatato; fovea laterali lævi. Elytra elongato-ovata, convexa, medio basi prominentia, humeris obtusis, basi declive punctulato-pubescenti, lateribus glabris; punctulato-sulcata, interstitiis æqualibus sat latis. Tibiæ 4 posteriores spina valida.

Differs from all the genera of the section in the shape and position of the cephalic prominences, and from *Proculejus*, with which it best agrees and to which it is further allied by the moderate length of the antennal leaflets, by the much greater relative length of the elytra.

The clypeus is distinct and separated from the front by a groove as in the allied genera, but the groove is multiflexuous instead of straight, and, probably in consequence of the transverse direction of the very obtuse frontal carinæ, there is no distinct conical tubercle at each end of the groove. The metasternum has a patch of coarse punctures on each side near the apex, its sides have a very narrow punctured groove, and the base on each side near the middle coxæ is punctulate-pubescent. The upper carina of the intermediate tibiæ only has a fringe of hairs, as in *Proculejus*.

1. **Prosoclitus obesus.**

Convexus, politus; labro (sat profunde emarginato), antennis, prothorace, episternis tibiisque posticis fulvo-hirtis; prosterno antice opaco, postice polito, convexo, acuminato; metasterno medio ventreque politissimis; thorace subtiliter punctulato, sulco dorsali marginem anteriorem longe haud attingente; elytris elongato-ovatis, punctulato-sulcatis, interstitiis sat latis æqualibus.

Long. 42 millim.; thorax 11, elytra 22 millim. long.

Hab. Mexico (*Deyrolle, coll. Bates*).

TRIÆNURGUS.

Gen. *Proculejo* affinis; differt clypeo quadridentato etc. Oblongus, convexus, elytris relative brevibus undique glabris, humeris valde prominentibus. Clypeus quadridentatus, dentibus intermediis inter se valde distantibus; sulco transverso nullo. Cornu verticis elongatum, apice liberum, una cum tuberculis basalibus validis liberisque tridentem elevatum horizontalem efficiens; carinæ frontales nullæ. Thorax convexus, sulculo marginali punctato, antice intus paullo dilatato et a margine recedenti. Elytra valde punctulato-sulcata, interstitiis subconvexis et inæqualibus, 7° angustissimo. Tibiæ intermediæ valide unispinosæ spinisque duabus minutis, carina superiori ciliata; posticæ unispinosæ. Antennarum clava longe trilamellata.

In its quadridentate clypeus this genus agrees with *Pseudacanthus*, Kaup, the typical species of which I have not seen. The two forms must, however, be generically distinct, as Kaup says of *Pseudacanthus* that the antennal leaflets are "ziemlich kurz."

1. **Triænurgus subopacus.** (Tab. I. figg. 8, 8*a*.)

Sat elongato-ovatus, valde convexus, politus; elytris fere opacis, valde punctato-sulcatis, interstitiis convexis, inæqualibus, 6° 7°que angustioribus; thoracis fovea laterali lævissima; mesosterno lateribus punctatis; metasterno lateribus late punctulato-pubescentibus, apice utrinque plaga grosse punctata.
Long. 36 millim.; thorax 11, elytra 19 millim. long.

Hab. Guatemala, Totonicapam (*Champion*).

Two examples, found beneath pine bark at an elevation of about 10,000 feet.

C. *Antennal leaflets very short.*

PSEUDACANTHUS.

Pseudacanthus, Kaup, Monogr. der Passal. p. 73.

Kaup's definition of this genus is not satisfactory, and although I have not seen the typical species (*P. mexicanus*) I doubt whether his second species (*P. laticornis*) can remain associated with it. His third species (*P. aztecus*) is certainly not congeneric with *P. laticornis*. In the doubt concerning the form of the base of the elytra and the length of the antennal leaflets of the typical species, it seems advisable to leave *P. laticornis* at present in the genus. All the species are from Mexico.

1. **Pseudacanthus mexicanus.**

Passalus mexicanus, Truqui, Rev. & Mag. Zool. 1857, p. 315 [1].
Pseudacanthus mexicanus, Kaup, Monogr. der Passal. p. 73, t. 4. f. 1 [2].

Hab. Mexico [1], Vera Cruz ? [2].

No specimen of this species has reached us. One named *P. mexicanus* in the Sallé collection, as before mentioned, is a *Proculejus*.

2. **Pseudacanthus (?) laticornis.** (Tab. I. figg. 9, 9*a*.)

Passalus laticornis, Truqui, Rev. & Mag. Zool. 1857, p. 316.
Pseudacanthus laticornis, Kaup, Monogr. der Passal. p. 74.

Hab. Mexico [1], Jacale (*Sallé*).

According to the type specimen, which I have examined, this species belongs to the same section of the family as *Proculejus*, the base of the elytra being prominent in the middle; but the leaflets of the antennæ are extremely short. The flanking tubercles of the horn of the vertex are visible, though short and little elevated. The frontal carinæ and their terminal tubercles are obsolete.

3. **Pseudacanthus (?) jalapensis.** (Tab. I. figg. 10, 10*a*.)

P. laticorni similis; minor, elytris relative brevioribus. Parum convexus, nitidus; cornu verticis basi lato, apice elongato libero, tuberculis basalibus sicut in *P. laticorni* conspicuis, brevibus, paullo elevatis; carinis frontalibus late curvatis, obtusis, in tuberculum ante clypei suturam terminantibus; antennarum lamellis mediocriter elongatis; thoracis angulis anticis rotundatis, sulculo marginali undique angusto punctulato, fovea laterali et lateribus lævibus; elytris medio basi parum prominentibus fere rectis, valde punctato-striatis, glabris, interstitiis subæqualibus; tibiis intermediis carina superiori in medio gradatim elevata ibique dense ciliata, bispinosis; metasterno (juxta coxas intermedias grosse punctato excepto) lævissimo.

Long. 25 millim.; thorax $6\frac{1}{2}$, elytra $13\frac{1}{2}$ millim. long.

Hab. Mexico, Jalapa (*Höge*).

PLATYVERRES.

Gen. *Verres* quoad verticis cornu simillimus; antennarum lamellæ quoque brevissimæ. Differt elytris basi haud sinuatis sed medio leviter rotundatis. Metasternum utrinque vitta depressa angusta apice haud dilatata punctulato-pubescenti. Labrum late triangulariter emarginatum. Caput læve; clypeus planatus, utrinque intra labri marginem dente valido apice truncato; cornu verticis cum tuberculis lateralibus simul elevato antice tridentato. Thorax magnus, angulis anticis late rotundatis, sulculo marginali lævi nullomodo dilatato.

Kaup placed the species for which this genus is rendered necessary in his genus *Verres*, belonging to his subfamily "Passalinæ," and therefore as far as possible apart from *Proculejus*, with which undoubtedly lie its true affinities. In the very short leaflets of the antennæ it no doubt resembles the "Passalinæ," but this is not more than a specific character in many of the Old World genera of the family, and cannot outweigh the form of the base of the elytra and the large size of the thorax. The parallel-sided and narrow lateral groove of the metasternum is also not unimportant as an indication of its true place. In *Verres* and all the allied large "Passalinæ" this groove is broadly dilated behind. In *Proculejus* and allies it is always narrow, and sometimes reduced to an impressed line.

1. **Platyverres intermedius.** (Tab. I. figg. 11, 11*a*, 12.)

Verres intermedius, Kaup, Monogr. der Passal. p. 115 [1].

Hab. Mexico [1] (*Sallé, ex coll. Sturm*), Juquila (*Sallé*), Misantla (*Höge*).

The type specimen is in the British Museum and has been compared with one of M. Sallé's examples by Mr. C. O. Waterhouse.

A specimen (Tab. I. fig. 12) taken by Herr Höge at Misantla has a thorax of extra-

ordinary size, considerably wider than the elytra. The following are its measurements: long. corp. 47 millim.; thorax long. 12½, lat. 18 millim.; elytra long. 24, lat. basi 15 millim. The difference between this and the originally described specimen is probably sexual.

Section II. *Elytra relatively long, the base broadly emarginate.*

A. *Antennal leaflets moderately elongated.*

RIMOR.

Oileus (partim), Kaup, Monogr. der Passal. p. 60.
Rimor, Kaup, *ibid.* p. 119.

Two species are known, both from Central America.

1. Rimor sagittarius.

Passalus sagittarius, Smith, Cat. Brit. Mus. Passal. p. 14, t. 1. fig. 3[1].
Passalus rimator, Truqui, Rev. et Mag. Zool. 1857, p. 266[2].
Rimor sagittarius, Kaup, Monogr. der Passal. p. 120[3].

Hab. Mexico [1 2 3], Orizaba (*Sallé*, spec. typ.).

2. Rimor sargi.

Rimor sargii, Kaup, Monogr. der Passal. p. 119[1].

Hab. Guatemala (*Sarg* [1]), San Joaquin, Cerro Zunil, Dueñas (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*).

TRUQUIUS.

Elongatus sat depressus. Clypeus quadridentatus, postice sulcato-marginatus; cornu verticis postice lato, antice longe et libero, tuberculis basalibus utrinque validis obliquis; carinis frontalibus brevibus, extus cum rugulis versus oculi carinam confusis. Thorax relative parvus, angulis anticis haud prominentibus, sulculo marginali antice dilatato et punctato. Elytra glabra, interstitiis lateralibus vix convexioribus. Tibiæ intermediæ extus dense hirtæ nec spinosæ. Metasternum disco haud planatum, lateribus anticis punctulato-pubescentibus, apice utrinque plaga punctata.

A genus rendered necessary for the reception of *Passalus* (*Pseudacanthus*) *astecus*, Truqui, which differs from the other species in the relatively great difference in length between the thorax and the elytra.

1. Truquius aztecus.

Passalus astecus, Truqui, Rev. & Mag. Zool. 1857, p. 314[1].
Pseudacanthus aztecus, Kaup, Monogr. der Passal. p. 74[2].

Hab. Mexico [1 2], Toxpam (*Sallé*, specimen typ.), Orizaba (*Sallé*), Jalapa (*Höge*).

SPURIUS.

Spurius, Kaup, Monogr. der Passal. p. 75.

The following is the only species known of this well-marked genus.

1. Spurius bicornis.

Passalus bicornis, Truqui, Rev. et Mag. Zool. 1857, p. 317 [1].
Spurius bicornis, Kaup, Monogr. der Passal. p. 75, t. 4. f. 2 [2].

Hab. MEXICO [1 2], Cordova (*Sallé*), Jalapa (*Höge*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, Escuintla, Coban (*Champion*).

POPILIUS.

Popilius, Kaup, Monogr. der Passal. p. 75.

Kaup enumerates five species under this genus, all from Mexico and Colombia. It is distinguished by its rather broad flattened clypeus, separated from the front by a fine or shallow (sometimes indistinct) line, having a tubercle at each end only; and by the oblique frontal declivity of the tubercle of the vertex, from the bottom of which spring the frontal carinæ.

The antennal leaflets are moderately elongated, and the genus is not widely distinct from *Soranus* of the subsection B.

1. Popilius klingelhöferi.

Oileus klingelhöfferi, Kaup, Harold's Col. Hefte, v. p. 5.
Popilius klingelhöferi, Kaup, Monogr. der Passal. p. 76 [1].

Hab. MEXICO [1].

2. Popilius mysticus.

Sat angustus, mediocriter depressus; tuberculo verticis compresso, tuberculis basalibus latissimis antice verticalibus; carinis frontalibus apud tuberculi verticis basin haud orientibus sed per lineam longitudinalem conjunctis; thorace margine antico utrinque prope angulum sinuato (sed angulis haud acutis), sulculo anteriori dilatato et punctato, lateribus medio plus minusve punctatis; elytris punctato-striatis, interstitiis mediocriter convexis; metasterno basi et vitta lata laterali depressa, punctato-rugosis, apice utrinque punctis majoribus paucis vel nullis; tibiis intermediis unispinosis carinaque superiori gradatim elevata ciliata.
Long. 25 millim.; thorax 6, elytra 15 millim. long.

Hab. GUATEMALA, Cubilguitz 1000 feet (*Champion*), Yzabal (*Sallé*).

Apparently very closely allied to *P. klingelhöferi.* Kaup, however, does not mention in his description of that species the remarkable position of the frontal carinæ: these instead of originating at the apex of the central tubercle (which in *P. mysticus* is almost vertical, and on nearly the same level as its broad flanking tubercles) commence lower

down, and describing a short curve end in a small tubercle long before the clypeal suture; at the same time they are joined to the base of the central tubercle by a longitudinal wheal, which shows traces of being composed of two obscure parallel keels, and is continued a short distance within and beyond the angle of the frontal carinæ.

Mr. Champion collected a good series of specimens at Cubilguitz, in the low forest-region of northern Vera Paz.

3. **Popilius expositus.**

Oileus expositus, Kaup, Harold's Col. Hefte, v. p. 4 [1].
Popilius expositus, Kaup, Monogr. der Passal. p. 77 [2].

Hab. Mexico ? [1] [2].

4. **Popilius granulifrons.** (Tab. I. figg. 13, 13*a*.)

Sat anguste elongato-oblongus, supra planatus; tuberculis basalibus latissimis antice verticalibus; tuberculo verticis cariniformi, apice valde declivi, carinis frontalibus apud declivitatis basin orientibus, imprimis usque ad tuberculum parum divaricatis deinde arcuatim usque ad tuberculum validum mandibularem continuatis; intra angulum acutum carinarum fovea rotundata polita, deinde fronte granuloso-opaca; clypeo plano, vix nitido, medio plus minusve indentato; thorace lateribus impunctatis, angulis anticis rotundatis; elytris dorso planatis, punctulato-sulcatis, interstitiis paullo convexis, 5°–7^{m} angustioribus; metasterno convexo, polito, basi utrinque pauciter punctulato, apice utrinque punctis nonnullis majoribus; tibiis intermediis unidentatis, carina superiori gradatim elevata et dense ciliata.
Long. 27 millim.; thorax 6, elytra 16 millim. long.

Hab. Guatemala, Totonicapam (*Champion*). Five examples.

Agrees in most points of the description with *P. expositus*, but larger (*P. expositus* is $10'''=22$ millim.) and differing in the granulated and opaque lower portion of the forehead. The usual impressed line separating the clypeus from the front is imperceptible, owing either to the granulate sculpture or to atrophy. Mr. Champion met with this species in the pine-forest region, at an elevation of about 10,000 feet.

5. **Popilius debilis.** (Tab. I. figg. 14, 14*a*.)

Minor et angustior, sat depressus; tuberculo verticis sicut in *P. granulifronte*, antice valde declivi carinisque frontalibus apud declivitatis apicem orientibus et flexuose usque ad dentes mandibulares continuatis; angulo intra basin carinarum polito, fronte infra granuloso-opaca; thorace relative parvo, angulis anticis omnino rotundatis sulculoque anteriore valde dilatato et grosse punctato, lateribus late grosse punctatis; elytris profunde punctato-striatis; metasterno et tibiis sicut in *P. granulifronte*.
Long. 21 millim.; thorax $4\frac{1}{2}$, elytra 14 millim. long.

Hab. Guatemala, Totonicapam, Capetillo (*Champion*).

Found in company with the preceding species, and also at a much lower elevation (4000–5000 feet) on the slope of the Volcan de Fuego at Capetillo.

6. **Popilius purulensis.**

P. debili paullo latior, subdepressus; tuberculo verticis postice magis dilatato, et antice paullo producto; carinis frontalibus in media fronte orientibus, utrinque usque ad tuberculum mandibularem continuatis, angulo intra basin carinarum granulato-opaco; clypeo plano, polito, sutura nulla; thorace parvo, angulis anticis rotundatis, sulculo anteriori dilatato, punctato, fovea laterali punctata; elytris sat profunde punctato-striatis, interstitiis subæqualibus; metasterno convexo æquali, postice vix punctato; tibiis sicut in precedentibus.

Long. 21 millim.; thorax $4\frac{1}{3}$, elytra $13\frac{1}{2}$ millim. long.

Hab. GUATEMALA, Purula 4000 feet (*Champion*).

One example only, found in the humid forest-region of Alta Vera Paz.

VINDEX.

Vindex, Kaup, Monogr. der Passal. p. 78.

Founded by Kaup on a single, Mexican, species.

1. **Vindex agnoscendus.**

Passalus agnoscendus, Percheron, in Guérin, Mag. Zool. 1841, t. 78. f. 2[1].

Hab. MEXICO[1], Jacale, Durasnal, Parada (*Sallé*), Jalapa (*Höge*).

2. **Vindex sculptilis.**

Mediocriter elongatus, sat depressus; elytris late sulcatis sulcisque eleganter transversim punctatis, interstitiis 5°–9^{m} et omnibus versus apicem cariniformibus.

Long. 21 millim.; thorax $5\frac{1}{3}$, elytra 12 millim. long.

Hab. GUATEMALA, Purula (*Champion*).

The frontal carinæ, as in *V. agnoscendus*, curve sharply round and end in long teeth which project over the clypeus and enclose a small semicircular space or fovea; at each end of the clypeus there is also a large and acute tooth. The metasternum shows no trace of flattened central plate, but the sides present a rather wide finely punctulate-pubescent depression.

STEPHANOCEPHALUS.

Stephanocephalus, Kaup, Monogr. der Passal. p. 78.

Two species are included by Kaup in this genus, one from Mexico, the other from Brazil. I have not seen specimens of either.

1. **Stephanocephalus stellaris.**

Stephanocephalus stellaris, Kaup, Harold's Col. Hefte, v. p. 8; id. Monogr. p. 79[1].

Hab. MEXICO[1] (*coll. Mniszech*).

PAXILLUS.

Paxillus, MacLeay, Horæ Entom. i. p. 105; Kaup, Monogr. der Passal. p. 80.

Two species are known, both widely distributed in Tropical and Subtropical America.

1. **Paxillus leachi.**

Paxillus Leachii, MacLeay, loc. cit. p. 106; Kaup, loc. cit. p. 80.
Passalus Leachii, Percheron, Monogr. des Passales, p. 37, t. 3. f. 2.

Hab. Mexico, Cordova, Orizaba, Tuxtla (*Sallé*), Jalapa (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, Capetillo, Zapote, San Isidro, Las Mercedes, Mirandilla, Calderas, Panima, Chacoj, Cubilguitz, Cahabon, Teleman (*Champion*); Nicaragua, Granada (*Sallé*), Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).—South America to South Brazil.

NELEUS.

Neleus, Kaup, Monogr. der Passal. p. 85.
Ninus, Kaup, loc. cit. p. 89.

The characters given by Kaup as distinguishing the two above-named genera are evidently only of specific value: one is the free apex of the horn or tubercle of the vertex in *Neleus*, which varies greatly, and another the median teeth of the clypeus, approximated and obtuse in *Neleus* and widely separate and acute in *Ninus*. The last-named character does not hold good, specimens of *Neleus tlascala* var. *punctiger* having the teeth as distant and acute as in *Ninus interstitialis*.

Seven species are known, distributed throughout Tropical America, north and south.

1. **Neleus tlascala.** (Tab. I. figg. 15, 15*a* *.)

Passalus tlascala, Percheron, Monogr. des Passales, p. 45, t. 3. f. 5 [1].

Hab. Mexico [1], Tres Marias Islands (*Forrer*), Cordova, Chiapas (*Sallé*), Jalapa (*Höge*); Guatemala, Yzabal (*Sallé*), Cerro Zunil, San Isidro, Zapote, San Gerónimo, Chacoj, Panzos, Lanquin (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui, Tolé (*Champion*).—South America to South Brazil and Paraguay.

Var.? *N. punctiger*, Serv. Enc. Méth. x. p. 20; Percheron, l. c. p. 47, t. 3. f. 6 [1].—Magis depressus, elytris fortius punctatis, clypeo dentibus medianis acutis distantibus.

Long. 30–45 millim.

Hab. South America, Cayenne [1], Amazons.

Kaup reunited the two above-named species, whereby the older name, *N. punctiger*, was retained for the form so common in our region. Judging from Amazons examples, which agree with Percheron's description of *N. punctiger*, for which he names Cayenne as the sole locality, the two forms seem to be sufficiently distinct to be treated as separate species.

* This species is badly drawn; the insect is much flatter than represented by our artist.

2. **Neleus interstitialis.**

Passalus interstitialis, Eschscholtz, Nouv. Mem. Moscou, i. p. 13 ; Percheron, Monogr. des Passales, p. 73, t. 5. f. 6 [1] ; Burmeister, Handbuch der Ent. v. p. 484.
Ninus interstitialis, Kaup, Monogr. der Passal. p. 89.
Passalus acuminatus, Eschscholtz, tom. cit. p. 21, var. *minor*.

Hab. Mexico, Ventanas (*Forrer*), Tuxtla, Teapa, Santa Cruz (*Sallé*), Jalapa (*Höge*) ; British Honduras, R. Sarstoon (*Blancaneaux*) ; Guatemala, near the city (*Salvin*), Zapote, Capetillo, Mirandilla, Pantaleon, San Gerónimo, Cubilguitz, Panzos (*Champion*) ; Nicaragua, Chontales (*Janson*) ; Panama, Volcan de Chiriqui (*Champion*).—South America, Ecuador, Peru, Amazons, South Brazil [1].—Antilles, Cuba.

NELEIDES.

Neleides, Kaup, Monogr. der Passal. p. 87.

Four Tropical-American species are included by Kaup in this genus. *Neleides* appears sufficiently distinct by its short frontal carinæ, which end in a tubercle before reaching the straight clypeus.

1. **Neleides punctulatus.**

Neleides punctulatus, Kaup, Harold's Col. Hefte, v. p. 35 ; id. Monogr. p. 87 [1].

Hab. Panama [1].

Unknown to me.

RHODOCANTHOPUS.

Rhodocanthopus, Kaup, Monogr. der Passal. p. 90.

Kaup enumerates five species from different parts of Tropical America. It is well represented in our region. The species are of minor size, with strongly sculptured elytra and generally multispinose outer edge of the middle tibiæ.

1. **Rhodocanthopus maillei.**

Passalus Maillei, Percheron, in Guérin's Mag. Zool. 1841, t. 78. f. 6 [1].
Passalus cognatus, Truqui, Rev. & Mag. Zool. 1857, p. 309 [2].
Rhodocanthopus maillei, Kaup, Monogr. der Passal. p. 90.

Hab. Mexico [1 2], Cordova, Orizaba (*Sallé*, exempl. typic.) ; Nicaragua, Chontales (*Belt*, *Janson*) ; Panama, Volcan de Chiriqui (*Champion*).—Colombia [1] ; Ecuador.

2. **Rhodocanthopus spiniger.** (Tab. I. figg. 16, 16 *a*.)

R. maillei proxime affinis ; differt clypeo quadrispinoso, spinis duobus intermediis plus minusve approximatis, exterioribus valde porrectis, canthisque oculorum bispinosis. Subdepressus, profunde punctato-striatus, striis 5[a]–9[m] latioribus et transversim punctatis ; tibiis intermediis et posticis extus multispinosis, parce ciliatis ; thorace lateribus solum sparsim grosse punctatis, angulis anticis productis.
Long. 21–25 millim.

Hab. Guatemala, Cubilguitz (*Champion*); Nicaragua, Chontales (*Janson*); Panama Volcan de Chiriqui (*Champion*).

Very closely allied to, and probably only a well-marked local variety of, *R. maillei*, which variety, however, does not embrace all the individuals of the localities in which it occurs. *R. maillei* in its normal form (clypeus obtusely indented in the middle) co-exists with it, and some Chiriqui examples show a tendency to bridge over the difference between the two forms. *R. maillei* and *R. cælatus* are related to each other in a similar way.

3. **Rhodocanthopus cælatus.**

Passalus cælatus, Erichs. Consp. Col. Faun. Peruan., in Wiegmann's Archiv, 1847, p. 112[1].
Rhodocanthopus cælatus, Kaup, Monogr. der Passal. p. 91.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, El Tumbador, Cerro Zunil, Capetillo, Calderas, Coban, Panima, Sinanja (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America, Peru [1].

4. **Rhodocanthopus inops.**

Passalus inops, Truqui, Rev. & Mag. Zool. 1857, p. 268 [1].
Rhodocanthopus morio, Kaup, Monogr. der Passal. p. 91 (= *P. morio,* Perch.?).

Hab. Mexico [1], Cordova, Orizaba (*Sallé*).

Kaup refers this species to *Passalus morio* and *P. longulus* of Percheron. It does not at all agree with Percheron's description of either of those species, the former of which is said to be common in Brazil and the latter to be from an unknown locality.

5. **Rhodocanthopus guatemalensis.**

Oileus guatemalensis, Kaup, Harold's Col. Hefte, v. p. 6 [1].
Rhodocanthopus guatemalensis, Kaup, Monogr. der Passal. p. 92.

Hab. Guatemala [1], Tactic, San Gerónimo (*Champion*).

Found by Mr. Champion in decaying liquidambar and other trees at Tactic; and in the forest on the summit of the Chuacus range of mountains, above San Gerónimo; in both places at an elevation of about 5000 feet.

6. **Rhodocanthopus punctatostriatus.**

Passalus punctatostriatus, Percheron, Monogr. des Passales, p. 78, t. 6. fig. 1.
Passalus contractus, Percheron, in Guérin's Mag. Zool. t. 79. f. 2.
Rhodocanthopus punctatostriatus, Kaup, Monogr. der Passal. p. 92.

Hab. Mexico, Orizaba, Vera Cruz, Juquila, Chiquihuite (*Sallé*), Jalapa (*Morrison, Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Yzabal (*Sallé*), near the city (*Salvin*), Aceituno, Capetillo, Pantaleon, San Isidro, Cerro Zunil, San

Gerónimo, Purula, Tactic, San Joaquin, Coban, Cahabon (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

7. **Rhodocanthopus curtus.**

Brevius oblongus, elytris postice paullo dilatatis, subplanatus; clypeo medio obtuse inciso, tuberculo verticis parum elevato, tuberculis basalibus obtusis rotundatis; carinis frontalibus argutis, longe ante tuberculum mandibularem terminatis sed utrinque cum cantho oculari per carinas obtusas conjunctis; fronte ocellato-punctata; thorace quadrato, angulis anticis subrectis (apice obtusis), sulculo marginali intus dilatato et grosse punctato, lateribus (prope angulum) medio foveaque grosse punctatis; elytris profunde striatis, striis transversim punctatis, 5ª–9ª latioribus; metasterno medio planato, postice utrinque area depressa grosse punctata; tibiis intermediis 2ª 3ªque spinosis et sparsissime ciliatis.

Long. 23 millim.; thorax long. $6\frac{1}{4}$, lat. 8 millim.; elytra long. $13\frac{1}{2}$ millim.

Hab. Guatemala, Mirandilla (*Champion*).

PTICHOPUS.

Ptichopus, Kaup, Monogr. der Passal. p. 96.

One of the very few well-marked generic forms in the American series of this family; distinguished from all others by the long pointed mandibles and the dilated anterior tibiæ. Only one species is known.

1. **Ptichopus angulatus.**

Passalus angulatus, Percheron, Monogr. des Passales, p. 84, t. 6. f. 5.
Passalus thoracicus, Smith, Cat. Brit. Mus. Passali, p. 15, t. 1. f. 3.
Ptichopus angulatus, Kaup, Monogr. p. 96[1].

Hab. Mexico[1], Minas Viejas (*Dr. Palmer*), Presidio (*Forrer*), Jalapa (*Höge*), Orizaba, Guanajuato, Vera Cruz (*Sallé*); Costa Rica (*Van Patten*); Panama, Bugaba (*Champion*).

EPIPHANUS.

Epiphanus, Kaup, Monogr. der Passal. p. 98.

Kaup includes five species in this genus, which is distributed over a large part of Tropical America, including the West Indies.

1. **Epiphanus binominatus.**

Passalus binominatus, Percheron, in Guérin's Mag. Zool. 1841, Ins. tt. 77–79.
Passalus occipitalis, Percheron, Monogr. p. 80, t. 6. f. 2 (nec Eschscholtz)[1].
Passalus erosus, Truqui, Rev. & Mag. Zool. 1857, p. 268[2].
Epiphanus binominatus, Kaup, Monogr. p. 98 (?)[3].

Hab. ? Mexico[2].—South America, Brazil[3]; West Indies, Cuba[1].

Truqui includes this species in his paper on the Mexican *Passali*, but only on the

strength of a specimen in La Ferté's collection said to be from that country. No example is contained in the large Mexican collections of M. Sallé and Herr Höge. Kaup's description differs much from those of Percheron and Truqui.

PHORONEUS.

Phoroneus, Kaup, Monogr. der Passal. p. 100.

Five species are enumerated by Kaup, viz. four from Brazil and one from Peru.

1. **Phoroneus jansoni.** (Tab. I. figg. 17, 17 *a*.)

Elongatus, convexus, vix planatus; clypeo triflexuoso, medio paullo producto ibique obtuse bidentato, denteque parvo utrinque supra labri marginem, mox pone dentes linea impressa; tuberculo verticis parum elevato, apice haud libero; carinis frontalibus brevibus, acutis, lævibus, longe ante clypeum terminatis; thorace angulis anticis productis, sulculo marginali omnino lævi antice intus dilatato, lateribus lævibus; elytris fortiter punctato-striatis, interstitiis subconvexis, 6°–9^{m} paullo angustioribus, omnino glabris; metasterno disco planato, lateribus vitta depressa sed omnino impunctato; prosterno lateribus et tibiis parce hirsutis, his unidenticulatis.

Long. 32 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*).

This species has the same facies and proportions as *Undulifer incisus*, but is not very closely allied to it generically. In the flattened disc (with sharp postero-lateral edges) of the metasternum it belongs to the *Neleus* group, in which its entirely smooth meso- and metasternum and sides of elytra give it generic distinction. *Undulifer* belongs to a group of genera, with long antennal leaflets, in which the "metasternum" is evenly convex, and the anterior angles of the thorax rounded instead of advanced, and more or less acute, as in *Neleus* and allies. Although the slightly arcuated middle part of the clypeus shows some approach to the singular form of the same member in *Undulifer*, the absence of spines in the latter constitutes a fundamental difference.

UNDULIFER.

Undulifer, Kaup, Monogr. der Passal. p. 103.

The following is the only recorded species.

1. **Undulifer incisus.**

Passalus incisus, Truqui, Rev. & Mag. Zool. 1857, p. 266.
Undulifer incisus, Kaup, loc. cit. p. 104.

Hab. Mexico, Parada, Oaxaca (*Sallé*), Cordova (*Höge*).

B. *Antennal leaflets short.*

SORANUS.

Soranus, Kaup, Monogr. der Passal. p. 107.

Kaup enumerates four Mexican and one Nicaraguan species under this genus. Its composition is, however, not satisfactory, as it contains species with moderately long and species with very short antennal leaflets, the former of which have a convex and impunctate metasternum and obtuse anterior thoracic angles, and the latter the commencement of a discal plate on the metasternum, with its patch of coarse punctures on its posterior sides, and somewhat produced thoracic angles. They are united only in the form of the carinæ and tubercles of the head, the horn of the vertex being flanked by broad tubercles, which are vertical in front. *Soranus recticornis* is closely allied to *Popilius.*

1. Soranus haagi.

Passalus haagii, Kaup, Harold's Col. Hefte, iv. p. 21.
Soranus haagii, Kaup, Monogr. der Passal. p. 107[1].

Hab. Mexico [1] (*coll. Haag*).

Unknown to me. If, as implied by Kaup originally referring this species to the genus *Passalus,* the antennal leaflets are very short, his genus *Soranus* should be limited to those species which possess that character, the others, or at any rate *S. recticornis,* being separated from it. To follow this course without examining his *S. haagi* seems, however, unadvisable.

2. Soranus tropicus.

Passalus tropicus, Percheron, Monogr. des Passales, p. 79, t. 7. fig. 4; Truqui, Rev. & Mag. Zool. 1857, p. 312[1].
Soranus tropicus, Kaup, Monogr. der Passal. p. 109[2].

Hab. Mexico [1 2], Jacale, Puebla (*Sallé*), Jalapa (*Höge*).

In this species the antennal leaflets are very short; the anterior angles of the thorax rectangular with the apex blunted; the metasternum without distinct discal plate, but with a slightly depressed patch of coarse punctures on each side.

3. Soranus wagneri.

Passalus wagneri, Kaup, Harold's Col. Hefte, iv. p. 30[1].
Soranus wagneri, Kaup, Monogr. der Passal. p. 108, t. 7. f. 2[2].

Hab. Guatemala [1 2]; Nicaragua, Chontales (*Janson*).

In *S. wagneri* the antennal leaflets are very short, the anterior angles of the thorax

subacute, the disc of the metasternum and its punctured posterior margins the same as in *S. tropicus*.

4. Soranus recticornis.

Passalus recticornis, Burmeister, Handbuch der Ent. v. p. 508[1]; Truqui, Rev. & Mag. Zool. 1857, p. 316[2].

Soranus recticornis, Kaup, Monogr. der Passal. p. 108, t. 7. f. 3[3].

Hab. Mexico [1 2 3], Orizaba (*Sallé*), Almolonga (*Höge*), Jalapa (*Morrison*).

The antennal leaflets in *S. recticornis* are rather longer than in the two preceding species, but the first is not twice as long as the body of the joint; the anterior angles of the thorax are rather obtuse; the metasternum convex and without trace of shield-formation or group of coarse punctures.

The middle tibiæ have in the middle of the outer edge (not on the upper carina) an abruptly projecting horny process, a little curled inwards, on which the long hairs are much denser than on the rest of the edge.

5. Soranus eclipticus.

Passalus eclipticus, Truqui, Rev. & Mag. Zool. 1857, p. 311[1]; Kaup, Harold's Col. Hefte, iv. p. 23.
Soranus eclipticus, Kaup, Monogr. der Passal. p. 108[2].

Hab. Mexico [1 2], Puebla (*Sallé*); Guatemala, Zapote (*Champion*).

In this species the antennal leaflets, first and second, are twice as long as the body of the respective joints, but vary a little in length in different individuals; the anterior angles of the thorax are obtuse; the metasternum without trace of flattened plate or group of coarse punctures.

6. Soranus championi. (Tab. I. figg. 18, 18 *a*.)

S. ecliptico simillimus, sed differt cornu verticis antice valde elongato et libero, horizontali, postice dilatato; tuberculis basalibus transversis antice verticalibus sed haud sicut in *S. ecliptico* culmine sulcatis; carinis frontalibus brevibus, obtusis, apice haud tuberculatis; thorace elytrisque sicut in ea specie; metasterno valde differt, lateribus late punctulato-pubescentibus absque vitta laterali depressa; antennarum lamellis brevissimis.

Long. 35 millim.

Hab. Guatemala, Purula (*Champion*).

One example only.

7. Soranus yucatanus.

S. recticorni similis, sed major elytrisque relative longioribus; tibiis intermediis simplicibus (carina breviter ciliata) unispinosis; cornu verticis horizontali, basi haud dilatato, apice tuberculo suberecto; tuberculis basalibus minoribus, valde depressis, antice haud verticalibus; carinis frontalibus fere sicut in *S. recticorni*, validis, divaricatis, ante tuberculum mandibularem terminatis; thorace angulis anticis subobtusis, lateribus impunctatis, sulculo marginali antice profundo intus haud dilatato, punctato; elytris punctato-striatis,

interstitiis subæqualibus, sat planis; metasterno basi utrinque punctulato-pubescenti, apice utrinque plaga grosse punctato; antennarum clava breviter lamellata.
Long. 35 millim.

Hab. Mexico, S.W. Yucatan (*Dr. Horn, coll. Bates*).

One example.

8. **Soranus (?) intergeneus.**

S. recticorni similis, sed differt clypeo antice deplanato, polito, postice leviter vel haud transversim carinato et post carinam linea impressa; cornu verticis fere sicut in *S. recticorni* sed apice minus libero et elevato; thorace angulis anticis rotundatis, lateribus grosse, et disco plus minusve grosse punctatis, sulculo marginali antice flexuoso, lato, grosse punctato; elytris punctato-striatis, interstitiis lateralibus paullo angustioribus; metasterno disco haud planato, basi utrinque punctulato-pubescenti, apice utrinque parum punctato; tibiis intermediis extus 1ª 2ªque spinosis, absque lobo hirsuto, carina gradatim paullo elevata et sparsim ciliata.
Long. 21 millim.

Hab. Mexico, Orizaba (*Sallé*); Guatemala (*Sallé*).

Five examples. This species bridges over the difference between the genera *Soranus* and *Popilius*, which Kaup places in distinct subfamilies. The antennal leaflets are somewhat elongated, as in *Soranus recticornis* and *S. eclipticus*, and not shorter than in some species of *Popilius*. As it agrees so closely in the form and position of the cephalic elevations with *Soranus*, it is better left, for the present, in the same genus as that species, notwithstanding the flattened front edge of the clypeus.

PASSALUS.

Passalus, Fabricius, Ent. Syst. i. 2, p. 240; Kaup, Monogr. der Passal. p. 105.

Kaup included four species only in the genus *Passalus* as narrowly restricted by him. As the *P. cornutus* of the founder of the genus is included among the four, the application of the name to the group may be considered as justified, although that species was not known to Fabricius when he originally treated of the genus, being first mentioned in his subsequent work, the 'Systema Eleutheratorum.'

1. **Passalus cornutus.**

Passalus cornutus, Fabr. Syst. El. ii. p. 256 (1805)[1].

Passalus distinctus, Weber, Obs. Entom. i. p. 79 (1805); Percheron, Monogr. p. 99, t. 7. f. 6; Kaup, Monogr. p. 106, t. 7. f. 1[2].

Hab. North America[1 2].—Mexico[2].

2. **Passalus zodiacus.**

Passalus zodiacus, Truqui, Rev. & Mag. Zool. 1857, p. 312[1]; Kaup, Monogr. p. 106.

Hab. Mexico[1], Orizaba (*Sallé*), Jalapa (*Morrison*).

3. Passalus cuspidatus.

Passalus cuspidatus, Truqui, Rev. & Mag. Zool. 1857, p. 313[1]; Kaup, Monogr. p. 106.

Hab. Mexico[1].

4. Passalus striato-punctatus.

Passalus striato-punctatus, Percheron, Monogr. p. 101, t. 7. f. 7; Truqui, Rev. & Mag. Zool. 1857, p. 311[1]; Kaup, Monogr. p. 106[2].

Hab. Mexico[1 2], Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*).

The antennal leaflets in this species are much more elongated than in *P. cornutus* and *P. zodiacus*, but they vary in length in different individuals, the first leaflet being sometimes more than twice the length of the body of the joint.

VETURIUS.

Veturius, Kaup, Monogr. der Passal. p. 110.

Kaup includes in this genus five species from various parts of Tropical America. All are of large size, and distinguished by the anterior margin of the thorax forming in the middle a rounded lobular projection.

1. Veturius heydeni.

Passalus Heydenii, Kaup, Harold's Col. Hefte, iv. p. 27.
Veturius Heydenii, Kaup, Monogr. p. 110[1].

Hab. Mexico[1].

2. Veturius platyrhinus.

Passalus platyrhinus, Hope, Cat. Lucan. p. 28[1].
Passalus validus, Burm. Handbuch der Entom. pp. 513–518[2].
Veturius platyrhinus, Kaup, Monogr. p. 111, t. 7. ff. 4, 4 *a*[3].

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Sallé*), Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui, Bugaba (*Champion*).—South America, Colombia[1 2 3].

This species varies in length, from 32 to 52 millim.; in the depth of the elytral striæ; and in the rugosity of the remarkably broad and deep sulci on the lateral margins of the thorax. One small example from Costa Rica has quite faint elytral striæ.

3. **Veturius cirratus.** (Tab. I. figg. 19, 19 *a*.)

Pro hoc genere gracilis, elytris subopalescentibus; cornu verticis horizontali infra apicem carinas frontales ante clypeum in tuberculum terminatas emittente; labro apice fere recto; thorace antice medio brevissime lobulato, angulis anticis minus obtusis, sulco marginali apud latera et antice sat dilatato-punctato; elytris humeris fulvo barbatis, striis concinne transversim punctatis, interstitiis convexis, 5°, 7° et 9° angustioribus; tibiis 4 posticis biseriatim sat longe ciliatis; metasterno vitta depressa laterali apice dilatata basique utrinque punctulato-pubescenti.

Long. 33 millim.

Hab. PANAMA, Volcan de Chiriqui, Bugaba (*Champion*).

A large number of examples. Distinguished from all other species of the genera more immediately allied to the restricted genus *Passalus*, by the hairy shoulders of the elytra. In all other essential characters it agrees with *V. platyrhinus*; but the cephalic horn, instead of being conically elevated anteriorly, lies nearly flat, its flanking tubercles being depressed and obtuse; from the elevated tubercle terminating the frontal carinæ two ridges diverge to the side of the ocular canthus, and enclose a deep pit. The middle tibiæ are unispinose. The milky or subopalescent gloss of the elytra, strongly marked in unworn specimens, is a striking feature. The entire lateral margin of the thorax is visible from above, and not concealed by the convexity of the limb as in *V. platyrhinus*.

SERTORIUS.

Sertorius, Kaup, Monogr. der Passal. p. 114.

One species only of this genus is recorded. It agrees with *Veturius* and *Verres* in the metasternum having a rather broad shallow punctulate-pubescent groove, much dilated behind, on each side; but differs from *Veturius* in the anterior margin of the thorax being normal, and from *Verres* in the flanking tubercles of the horizontal cephalic horn being basal and depressed.

1. **Sertorius agassizi.**

Sertorius agassizi, Kaup, Monogr. p. 114[1].

Hab. GUATEMALA[1] (*Sallé*), Capetillo (*Champion*).

VERRES.

Verres, Kaup, Monogr. der Passal. p. 114.

Four Tropical-American species were included in this genus by Kaup, of which three were from Mexico or Central America. One of these, *V. intermedius*, had little in common with the rest and forms the new genus *Platyverres*, dealt with in Section I. The new species described below restores the number to four. *Verres* as now restricted

may be known by the deeply emarginated and excavated labrum, and the form of the cephalic horn, which is elevated together with its closely-blended flanking tubercles.

1. **Verres corticicola.**

Passalus corticicola, Truqui, Rev. & Mag. Zool. 1857, p. 310[1]; Kaup, Harold's Col. Hefte, iv. p. 24.
Verres corticicola, Kaup, Monogr. p. 115, t. 7. f. 7[2].

Hab. Mexico[1 2], Cordova (*Sallé*); Guatemala, Yzabal (*Sallé*), Cubilguitz, Coban, San Joaquin, Tactic (*Champion*); Nicaragua, Chontales (*Janson*).

2. **Verres hageni.**

Verres Hagenii, Kaup, Monogr. der Passal. p. 116[1].

Hab. Mexico, Jalapa (*Höge*); Guatemala[1], Capetillo (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Sallé*, *Van Patten*).

3. **Verres cavicollis.** (Tab. I. figg. 20, 20 *a*.)

V. furcilabro affinis, labro apice profunde exciso et supra profunde et longe excavato; sed differt thoracis sulculo marginali antice utrinque in foveam latissimam haud profundam dilatato; clypeo antice valde flexuoso medioque profunde emarginato; cornu verticis cum tuberculis lateralibus consolidato, antice tricuspidato, dente mediano prolongato libero; carinis frontalibus a cornu separatis, arcum transversum parum curvatum efficientibus utrinque in tuberculum longe ante clypeum terminatum; metasterno punctulato-pubescenti, medio solum glabro, lateribus vitta punctulato-pubescenti, postice valde dilatata depressa, plagaque grossius punctata utrinque juxta apicem.

Long. 37 millim.; thorax 9, elytra 20 millim. long.

Hab. Mexico, Jalapa (*Höge*).

Tribe LAMELLICORNIA.

In dealing with this great and important tribe of Coleoptera, the described species of which from all parts of the world cannot now be fewer than 10,000, I have found it convenient to follow, with but slight modifications and omitting the main divisions founded on the situation of the abdominal spiracles, the classification given in the third volume of Lacordaire's 'Genera.' The tribe has been considered by eminent entomologists to be the most highly organized of the entire order. The "Lamellicornia" are further remarkable as being more sharply severed than most others from the nearest allied tribes: thus the plan adopted in the "Carabidæ" and "Longicornia" of the present work, of beginning with the least specialized forms (or those which show traces of approach to other tribes), is here impracticable, as no connecting links have been discovered. There are, nevertheless, numerous genera which exhibit characters intermediate between those of the chief Families composing the Tribe; such genera were included by Lacordaire in his 'Orphnides,' 'Hybosorides,' 'Glaphyrides,' and some of the earlier groups of his 'Melolonthides;' and it would perhaps be an improvement to displace these genera from the position he assigned to them and make them the starting-point of the classification of the whole tribe, taking afterwards in succession the larger families which radiate from this common root of the whole. But this course could not be taken with advantage in a Faunistic work; it is a task for a future Monographer, and will entail a careful study of numerous aberrant genera from various parts of the world, many of which are isolated forms and rare in collections. For the present I have taken the relations of the ligula to the mentum as offering a better main division of the Tribe than the position of the abdominal spiracles.

Subtribe I. *Ligula distinct from the mentum.*

Fam. COPRIDÆ.

MEGATHOPA.

Megathopa, Eschscholtz, Entomogr. p. 34 (1822); Naturwiss. Abhandl. aus Dorpat, i. p. 90 (1823); Lacordaire, Gen. Col. iii. p. 75.

Thirteen species of this genus have been described, more than half belonging to temperate South America, the rest spread over the tropical zone as far north as Yucatan.

1. **Megathopa yucateca** (Tab. II. fig. 1.)

Megathopa yucateca, Harold, Ann. Soc. Ent. Fr. 1863, p. 173[1].

Hab. Mexico, Yucatan [1], Merida (*Sallé*), Tapachula in Chiapas (*Höge*).

2. **Megathopa candezei.** (Tab. II. fig. 5.)

Megathopa candezei, Harold, Col. Hefte, xi. p. 102[1].

Hab. Nicaragua, Chontales[1] (*Belt, Janson*); Panama, Volcan de Chiriqui (*Champion*).

An example from the Volcan de Chiriqui is figured.

CANTHON.

Canthon, Hoffmansegg, Wiedem. Zool. Mag. i. 1, p. 38 (1817); Harold, Monogr. in Berl. ent. Zeitschr. 1868, p. 1.

Coprobius, Latreille, Règne Anim. ed. 2, iv. p. 535 (1830); Burmeister, Stett. ent. Zeit. xxxiv. p. 410 (1873).

Like *Megathopa* an exclusively American genus, extending in the north to the 41st parallel of latitude and to about the same distance from the equator in the south, the species being most numerous and varied in the equatorial subzone. 135 species have been described.

1. **Canthon sallæi.** (Tab. II. fig. 2.)

Canthon sallei, Harold, Ann. Soc. Ent. Fr. 1863, p. 174[1]; Berl. ent. Zeitschr. 1868, p. 39[2].

Hab. Nicaragua, Granada[1] (*Sallé*), Chontales (*Belt, Janson*); Costa Rica (*Van Patten*); Panama (*Boucard*), Taboga Island (*Champion*).—South America, Colombia[2].

Two Nicaraguan examples in the Sallé collection are labelled "type": these agree in colour with Harold's original description of the species, but not with the subsequent one given in his 'Monograph.' The species seems to be represented in Nicaragua by one constant varietal form, in which the upper surface is shining testaceous-red, with the head, a narrow basal margin to the thorax and elytra, and the suture of the latter, dark brassy; the under surface and legs brassy-black, with the abdomen (except its basal and apical margins) and pygidium testaceous-red. In Costa Rica the local form is similar, except that the thorax has a broad brassy-black central vitta (sometimes interrupted in the middle), and the basal and sutural brassy-black borders of the elytra are more or less (sometimes very greatly) dilated. Examples from Panama and Taboga Island again differ, the thoracic vitta being narrower and dilated in the middle, the abdomen wholly black, except the pygidium (which is yellow with a dark central line), and the hind (and sometimes also the middle) femora testaceous-yellow in the middle.

In the form or forms described by Von Harold in his 'Monograph,' who, according to his habit, does not say to which of the numerous localities they refer, the colours are "piceus, thorace leviter virescente maculis quatuor in angulis dispositis testaceis, vel omnino piceo vel rufo, elytris nigris interdum rufo-signatis."

A Nicaraguan specimen is figured.

2. Canthon speciosus.

Canthon speciosus, Harold, Berl. ent. Zeitschr. 1868, p. 41[1].

Hab. Mexico [1]; Guatemala, Cubilguitz, Teleman (*Champion*).

3. Canthon spinosus.

Canthon spinosus, Harold, Ann. Soc. Ent. Fr. 1863, p. 174[1]; Berl. ent. Zeitschr. 1868, p. 42[2].

Hab. Mexico, Toxpam (*Sallé* [1]), South Mexico [2].

Von Harold described this species originally from specimens taken by Sallé at Toxpam, and subsequently redescribed it from examples from Southern Mexico in Bonvouloir's collection. In the Sallé collection there are no specimens from Toxpam, and those labelled *C. spinosus* (from Tuxtla, Playa Vicente, and Cordova) seem to agree better with the description of *C. speciosus* than with that of *C. spinosus*. One, however, from Sturm's collection, seems to be intermediate between the two species; so that it is possible they form really only one. It is to be remarked that Von Harold described his *C. speciosus* at a subsequent date, when he appears not to have had the type specimens of his original *C. spinosus* before him.

4. Canthon septem-maculatus.

Ateuchus septem-maculatus, Latr., in Humboldt & Bonpland, Obs. Zool. i. p. 180, t. 17. f. 5 (1811) [1].

Canthon septem-maculatus, Harold, Berl. ent. Zeitschr. 1868, p. 51 [2].

Hab. Panama (*Boucard*), David, Tolé (*Champion*).—South America, Colombia [1 2].

The typical form as described and figured by Latreille alone occurs in our Fauna.

5. Canthon moniliatus. (Tab. II. fig. 3.)

C. rufulo affinis, late ovatus, subnitidus, elytris castaneis utrinque striis octo distanter et eleganter punctulatis; capite æneo, clypeo bidentato et prope dentes utrinque breviter recte truncato; thorace flavo-testaceo, medio juxta margines anticum et posticum æneo plagiato; subtus pedibusque nigro-nitidis, femoribus medio albo-testaceis.

Long. 6–7 millim.

Hab. Panama, Bugaba (*Champion*).

Var. Thorax flavus, macula unica nigro-ænea juxta marginem posteriorem.

Hab. Nicaragua, Granada (*Sallé*).

Belongs to the *C. triangularis* group, and the subgroup *C. rufulus*, in which the sides of the prosternum are without transverse carina and the hind femora ungrooved near their anterior edge. The thorax is rather strongly but obtusely angulated in the middle of its sides, and the seventh and eighth elytral striæ are obliterated on the humeral callus. The pygidium is dull reddish, opaque, and faintly carinated down the middle. The legs are blackish or castaneous, with the middle (and greater part) of the femora

very pale testaceous. In well-developed examples the thorax has a strong golden-brassy tinge.

C. moniliatus may be distinguished from the nearly-allied *C. sexspilotus*, Guérin, and other neighbouring species, by the fine but sharply impressed elytral striæ, in which are small and distinct but distant punctures. The variety is labelled in the Sallé collection "*C. cyanocephalus*, Har., type." It was probably named so by Von Harold on being communicated to him after his Monograph was published, as no mention is made of the specimen, nor is the locality Nicaragua given by him under *C. cyanocephalus*, which is stated to be from "Cayenne, Orinoco, and Guiana." The Nicaraguan insect does not correspond at all with Harold's description.

6. **Canthon femoralis.** (Tab. II. fig. 7.)

Coprobius femoralis, Chevr. Col. Mex. Cent. i. no. 74 (1834)[1].
Canthon femoralis, Harold, Berl. ent. Zeitschr. 1868, p. 62[2].
Canthon ochropus, Harold, Col. Hefte, i. p. 79 (1867).

Hab. Mexico [1 2], Cordova, Santecomapan, Teapa (*Sallé*), Juquila, Tapachula in Chiapas (*Höge*); British Honduras, River Sarstoon (*Blancaneaux*); Guatemala, Coban, Zapote, Mirandilla (*Champion*); Costa Rica [2].

Belongs to a numerous group of the genus, not indicated in Von Harold's Monograph, in which the robust hinder tibiæ are straight on their inner side and strongly arcuated on their outer edge; generally also they are thickened and calf-like. I find that the sexual difference in the pygidium is the same as described by Von Harold in *C. angustatus*, this segment being remarkably short and convex; but the male anterior tibiæ are broad and tridentate (with broad and notched apical spur), and not elongated and bidentate as in *C. angustatus*. An example from Juquila is figured.

7. **Canthon angustatus.** (Tab. II. fig. 4.)

Canthon angustatus, Harold, Col. Hefte, i. p. 79 (♂); Berl. ent. Zeitschr. 1868, p. 63 (♂ ♀)[1].

Hab. Nicaragua, Chontales (*Belt, Janson*); Costa Rica [1].—South America, Colombia [1].

8. **Canthon euryscelis.** (Tab. II. fig. 6.)

Breviter ovatus, supra (præcipue thorace) convexus, politus, niger, interdum capite et apice castaneis; clypeo bidentato; thorace medio utrinque angulato et antice arcuato denticulatoque; elytris lævibus; tibiis 4 posticis latissimis, subcompressis, extus valde arcuatis, vix bicarinatis nec inter carinas sulcatis prosterno transversim carinato; pygidio nitido.

♂. Tibiæ anticæ latæ, dentibus validis tribus approximatis, calcare apicali apice valde furcato; pygidio convexo.

♀. Tibiæ sicut in ♂, sed calcari apicale acutissimo; pygidio sat elongato, vix convexo.

Long. $4\frac{1}{4}$–$5\frac{1}{2}$ millim.

Hab. Mexico, Cordova, Playa Vicente, Oaxaca (*Sallé*); Guatemala (*coll. Bates*); Panama, Bugaba (*Champion*).

Belongs to the same group as *C. femoralis*, *C. angustatus*, *C. nitidicollis*, *C. semiopacus*,

C. quadriguttatus, *C. subhyalinus*, &c., but shorter in outline than in the larger species of the group, and showing only a slight narrowing behind. In the feeble carinæ and absence of groove along the outer edge of the posterior tibiæ it agrees with *C. subhyalinus*, *C. quadriguttatus* (Oliv.), and *C. femoralis*. The clypeus has two sharp triangular approximate teeth, and is rounded on each side immediately from the base of the tooth, showing a slight but sharp projection at the suture of the genæ. There is a strong sutural depression at the base of the elytra, which does not extend to the thorax. Immature specimens are glossy pale castaneous.

9. **Canthon lamprimus.** (Tab. II. fig. 8.)

Breviter ovatus, supra (præcipue thorace) convexus, politissimus, nigro-cyaneus vel cupreus, pedibus rufo-testaceis; clypeo bidentato; thorace medio utrinque angulato et antice valde arcuato denticulatoque; elytris vix perspicue striatis; tibiis 4 posticis subcompressis, extus arcuatis, acute bicarinatis, et inter carinas sulcatis; prosterno transversim carinato; pygidio sericeo.

♂. Tibiæ anticæ latæ, dentibus 2 inferioribus approximatis, 3° superiore distanti et multo minore, calcare apicali lato, apice angulariter emarginato.

Long. 5–5½ millim.

Hab. PANAMA, Tolé, San Miguel in the Pearl Islands (*Champion*).

Allied to *C. euryscelis*, but more glossy and metallic, and hind tibiæ distinctly less dilated. A further distinguishing character lies in the anterior tibiæ, in which the upper tooth is small and distant from the two lower ones, whilst in *C. euryscelis* all three are large and equally close together. The clypeus is not so evenly rounded on each side from the base of the teeth, but is flexuous, and the sharp denticle at the lateral suture is more prominent. The angular dilatation on the side of the thorax is unusually sharp, and the vertical arcuation of the side in front of the angle very highly developed; the hind angles of the thorax are prominent and acute. The base of the elytral suture is depressed, and the humeral callus free from traces of striæ.

Four examples. The single specimen from Tolé is brilliant red-coppery, the others bluish-black; the former is figured.

10. **Canthon cælius.**

C. lamprimo proxime affinis, forsan ejus varietas, sed differt elytris subopacis nigro-cyaneis distincte striatis; capite thoraceque æneo-cyaneis politissimis, subtilissime punctulatis; pedibus piceo-rufis, femoribus metallicis; pygidio sericeo punctulato; cætera sicut in *C. lamprimo*.

Long. 5½ millim.

Hab. PANAMA, David (*Champion*).

The outline and dentition of the clypeus are exactly as in *C. euryscelis*, and also as in the common North-American *C. viridis*, from which the straight and simple inner edge of the anterior tibiæ amply distinguish both the similar Panama species. The form of the thorax is also the same as in *C. lamprimus*, but the surface is finely punctulated, whilst under the same power that of *C. lamprimus* appears perfectly smooth; the elytra

differ in being silky opaque—a little more shining near the suture, and the striæ, though very shallow, are much more distinct. The thorax is dark brassy-green, with a brilliant golden-coppery tinge on the disc. The upper tooth of the anterior tibiæ is small and distant from the two lower teeth, and the hinder tibiæ are sharply bicarinate down their outer edges and grooved between the carinæ, as in *C. lamprimus*.

11. **Canthon raripilus.** (Tab. II. fig. 9.)

Parvus, rotundatus, nitidus, viridi-cyaneus, passim (ventre excepto) sat grosse discrete punctatus, punctis griseo-piliferis; clypeo oblique angustato, bidentato; thorace minus convexo, medio utrinque acute angulato et antice arcuato denticulatoque; elytris subtilissime striatis; pygidio nitido; prosterno transversim carinato; tibiis 4 posticis mediocriter dilatatis, extus arcuatis; tibiis anticis apice truncatis, dente superiore remoto et minore.

Long. 3–4½ millim.

Hab. Panama, Taboga Island, San Miguel in the Pearl Islands (*Champion*).

Apparently closely allied to *C. juvencus*, Harold, but differing in the shining pygidium studded with large piliferous punctures; in *C. juvencus* the pygidium is described as "opacum, læve." The species belongs to the same group as the preceding and to the subgroup having sharply bicarinate and grooved outer edge of the posterior tibiæ. The scutellar depression is very slight. The punctures on the head and thorax are large and equally distributed; on the elytra they are rather smaller and arranged in two rows along each interstice.

12. **Canthon viridis.**

Copris viridis, Beauv. Ins. Afr. et Am. p. 23, t. 3. fig. 2 (1805)[1].

Onthophagus viridicatus, Say, Bost. Journ. Nat. Hist. i. p. 173 (1835)[2]; Complete Writings, ii. p. 648.

Canthon viridis, Harold, Berl. ent. Zeitschr. 1868, p. 112[3]; Horn, Trans. Am. Ent. Soc. 1870, pp. 44 & 47[4].

Hab. North America[1 2 3 4].—Mexico[3], Cordova, Orizaba, Etla, Cuernavaca, Yolotepec, Parada (*Sallé*), Ventanas, Mexico city, Iguala, Cerro de Plumas, Acapulco, Tapachula (*Höge*), Tehuantepec (*Sumichrast*); British Honduras (*Blancaneaux*); Guatemala, Dueñas, Capetillo, Cahabon, Teleman, Panzos (*Champion*); Nicaragua, Granada (*Sallé*), Chontales (*Janson*); Central America[4].

Of similar general form and colours to *C. cælius* and its allies, and agreeing with them in the arcuated outer edge of the posterior tibiæ, but these organs are scarcely so broadly dilated. It is distinguished, however, from the group by the anterior tibiæ being abruptly dilated on the inner side from before the middle to the apex. Von Harold admits a wide range of variation within the species; and it is, in fact, impossible to detect valid differences between violet-coloured impunctate Mexican examples 7 millim. long, and brassy-green North-American specimens only 4 millim. long. The small bright green form, moreover, co-exists with the large examples of the violet and blue-

black variety in various Mexican localities. In all the varieties the elytra are less bright than the head and thorax, as Harold expresses it "nitidulus, elytris minus nitidis." The following form, in which the elytra are highly polished throughout, is doubtless, therefore, different, although exhibiting the same peculiar shape of the anterior tibiæ.

13. Canthon championi.

C. viridi proxime affinis, major, undique politissimus, viridi-cyaneus; capite lævi, clypeo bidentato et utrinque flexuoso, genarum angulo acuto; thorace subtilissime punctulato vel lævi, lateribus ante medium valde angulatis et antice arcuatis haud denticulatis; elytris vix striatis; prosterno transversim carinato; tibiis anticis intus ante medium subito et valde dilatatis, apice recte truncatis, extus dente superiore minore et remoto; tibiis posticis parum dilatatis, intus rectis, extus arcuatis, bicarinatis et parum profunde sulcatis.

♂. Tibiæ anticæ calcare acuto basi lato et dentato.

Long. $6\frac{1}{2}$–$7\frac{1}{2}$ millim.

Hab. Guatemala, Senahu (*Champion*).

14. Canthon politus.

Canthon politus, Harold, Berl. ent. Zeitschr. 1868, p. 60[1].

Hab. South Mexico[1].—South America, Colombia[1].

I have not seen an example of this species from Mexico or Central America.

15. Canthon forreri. (Tab. II. fig. 10.)

C. probo proxime affinis, æneo-viridis, supra subtiliter alutaceus, thorace nitidiore elytrisque subopacis; capite et thorace discrete punctulatis; clypeo crebre ruguloso-punctato, 4-dentato, angulisque genarum prominulis obtusis; elytris distincte striatis, stria humerali subtiliter carinulata, interstitiis guttulis nitidis conspersis.

Long. 6 millim.

Hab. Mexico, Presidio (*Forrer*).

Distinguished from its nearest allies by its rich dark green colour, and brilliant thorax covered with scattered punctures. In sculpture it comes nearest *C. probus*.

16. Canthon nyctelius.

C. puncticolli (Lec.) proxime affinis, nigro-violaceus, undique alutaceo-opacus et guttulis nitidis conspersus; capite punctulato, clypeo reflexo, sicut in *C. probo* 6-dentato; thorace opaco, subtiliter sparsim punctulato, medio basi elytrisque regione scutellari profunde depressis; elytris haud profunde exarato-striatis, stria humerali carinulata, interstitiis haud punctatis, 2° et 3° basi tumide elevatis; pygidio punctulato; corpore subtus pedibusque nigris nitidis, ventro alutaceo, femoribus posticis setifero-punctatis tibiisque apice unicalcaratis.

Long. 4–$6\frac{1}{2}$ millim.

Hab. Mexico, Santa Clara in Chihuahua, Chihuahua city, Durango city (*Höge*).

Distinguished from *C. puncticollis* by the remarkable depression at the base of the thorax and elytra, and the corresponding elevation of the second and third elytral interstices at their base. The whole upper surface (including the pygidium) is smoothly and evenly alutaceous and opaque, sprinkled with fine punctures, except the elytra.

17. Canthon praticola.

Canthon praticola, Leconte, Col. of Kansas and Eastern New Mexico, p. 10[1]; Horn, Tr. Am. Ent. Soc. 1870, pp. 44, 45[2].

Hab. North America, Kansas[1 2].—Mexico, Santa Clara in Chihuahua, Chihuahua city, Villa Lerdo in Durango (*Höge*).

Dr. Horn gives the size of the North-American form as $6\frac{1}{2}$–$9\frac{1}{2}$ millim. The North-Mexican examples vary from 8–11 millim. In other respects the latter agree closely with Dr. Horn's description and with numerous examples from Colorado (?) in my collection.

18. Canthon lævis.

Scarabæus lævis, Drury, Ill. Exot. Ins. i. p. 79, t. 35. f. 7[1].
Scarabæus volvens, Fabr. Ent. Syst. i. p. 66.
Canthon lævis, Harold, Berl. ent. Zeitschr. 1868, p. 99; Horn, Tr. Am. Ent. Soc. 1870, pp. 45 & 47[2].

Hab. North America[1 2].—Mexico, Monclova in Coahuila (*Dr. Palmer*), Nuevo Laredo in Tamaulipas, Villa Lerdo in Durango, Zacualtipan in Hidalgo, Monterey (*Höge*), Orizaba (*Sallé*).

Herr Höge obtained a good series of examples, all black with a scarcely perceptible greenish tinge, and rather smaller (12–16 millim.) than the typical form of the middle Atlantic States. The single specimen from Orizaba is very small (10 millim.).

19. Canthon hidalgoensis.

C. lævi proxime affinis, sed minor et brevior, granulis minutissimis haud elevatis densissime conspersus. Niger, vix obscure viridi tinctus.
Long. 8–12 millim. ♂ ♀.

Hab. Mexico, Zacualtipan in Hidalgo, Aguas Calientes city (*Höge*).

The granulation is so fine that to the naked eye the insect appears smooth. The granules on the thorax are reduced to minute shining specks without elevation, the interstices between which are finely alutaceous. Rare examples with the granules on the elytra more elevated tend to bridge over the difference between this species and the North-Mexican form of *C. lævis*.

All the numerous examples, with the exception of one from Aguas Calientes, were taken at Zacualtipan.

20. Canthon circulatus.

Canthon circulatus, Harold, Berl. ent. Zeitschr. 1868, p. 72[1].

Hab. Mexico[1].

Our collections do not appear to contain this species.

21. **Canthon æquinoctialis.**

Canthon æquinoctialis, Harold, Berl. ent. Zeitschr. 1868, p. 79 [1].

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, David (*Champion*).—SOUTH AMERICA, Colombia [1], Amazons.

Central-American differ from South-American examples only in being smaller (11 millim.), the latter varying little from 14 millim.

22. **Canthon lituratus.** (Tab. II. fig. 12, *var.*)

Ateuchus lituratus, Germar, Mag. Ent. i. p. 117.

Canthon lituratus, Perty, Del. Anim. Artic. Brasil. p. 38, t. 8. f. 4; Harold, Berl. ent. Zeitschr. 1868, p. 95 [1].

Var. *Canthon quadripustulatus*, Guérin, Verh. zool.-bot. Ver. Wien, v. p. 587 [2]; Harold, l. c. p. 95.

Hab. PANAMA, near the city, Volcan de Chiriqui 2500–4000 feet (*Champion*).—SOUTH AMERICA, Colombia to Patagonia [1], Ecuador [2].

All the Chiriqui examples belong to a well-marked variety, nearly agreeing with Guérin's description of *C. quadripustulatus* from Ecuador. It is larger than the typical *C. lituratus*; and the elytra instead of having the peculiar and characteristic design of that common South-American form are silky-black with two large quadrate orange spots on each (sometimes united on the lateral border), one below the humeral callus, and one covering the apical callus. The antennæ are darker in colour. The oblique position of the dorsal carina along the posterior tibiæ and the form of the clypeus are the same as in typical *C. lituratus*.

23. **Canthon gagatinus.**

Canthon gagatinus, Harold, Ann. Soc. Ent. Fr. 1863, p. 173; Berl. ent. Zeitschr. 1868, p. 102 [1].

Var. *Canthon amethystinus*, Harold, Ann. Soc. Ent. Fr. 1863, p. 173; Berl. ent. Zeitschr. 1868, p. 102 [2].

Hab. MEXICO [1 2], Northern Sonora (*Morrison*), Puebla, Orizaba, Durasnal, Cuernavaca, Parada, Capulalpam, Guanajuato (*Sallé*), Mexico city (*Flohr*), Chihuahua, Colima city, Morelia, Jalapa, Las Vigas, Rinconada, Zapotlan in Colima, Chilpancingo (*Höge*); GUATEMALA, San Gerónimo (*Champion*).

The dull black and the shining dark indigo-blue forms of this common species occur together in various localities in Mexico, and at San Gerónimo, Guatemala. Von Harold's third variety " obscure glauco-viridis " appears to be rare.

24. **Canthon chevrolati.**

Canthon chevrolati, Harold, Berl. ent. Zeitschr. 1868, p. 119 [1].

Hab. MEXICO [1], Northern Sonora (*Morrison*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Ventanas, Presidio (*Forrer*), Campeche in Yucatan, Vera Cruz, Cordova,

Toxpam, Jalapa, Matamoros Izucar, Parada, Orizaba, Guanajuato, Panistlahuaca (*Sallé*), Jalapa, Sayula, Misantla, Vera Cruz, Oaxaca, Rinconada, Cholula, Acapulco, Mazatlan, Tapachula (*Höge*), Mexico city (*Flohr*), Tehuantepec (*Sumichrast*); Guatemala (*Sallé*), San Gerónimo, Pantaleon, Mirandilla (*Champion*); Nicaragua, Chontales (*Belt*).

Varies in size from 7 to 12 millim.; in colour from brilliant brassy-green and golden-coppery to bluish-green, violet, and deep black. In northerly localities the elytra are much less glossy. A small rotundate ovate form, with pygidium only slightly convex even in the male (*C. chloris*, Sallé coll.) occurs in various localities in Mexico.

25. **Canthon mutabilis.** (Tab. II. fig. 11, *var.*)

Canthon mutabile, Lucas, in Voy. de Castelnau, Zool. iii. p. 100 [1].
Canthon mutabilis, Harold, Berl. ent. Zeitschr. 1868, p. 127 [2].

Hab. Panama, Bugaba, Volcan de Chiriqui, Tolé (*Champion*).—South America [2], Colombia [2], Amazons [1 2], La Plata [2].

The Panama examples form a local variety of the species similar to the var. *transversalis* described by Von Harold, but differing in the bright brassy-green head and thorax. In Colombia the local form is similar, with the exception of having a brassy-black head and thorax. Some examples from the Lower Amazons are like the Colombian form, but they are there mingled with a great diversity of colour-variations.

An example from Tolé is figured.

26. **Canthon deyrollei.**

Canthon deyrollei, Harold, Berl. ent. Zeitschr. 1868, p. 132 [1].

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*).

The locality of the species was unknown to Von Harold [1]. *C. deyrollei* strongly resembles the blue-black colour-variety of *C. chevrolati*, from which its pluridentate clypeus at once distinguishes it.

27. **Canthon chlorizans.**

Obscure viridi-metallicus, nitidus, pedibus rufo-testaceis; capite thoraceque sat crebre sed discrete punctatis; clypeo æqualiter quadri-dentato, sutura genarum haud dentata; elytris sat acute simpliciter striatis, interstitiis disperse punctulatis, humeris haud carinulatis; pygidio parum convexo, punctato, medio prope basin obtuse carinato; corpore subtus nigro, subopaco; tibiis posticis subrectis haud dilatatis.

♂. Tibiarum anticarum calcar apice lato bifido.

Long. 5 millim.

Hab. Mexico, Juquila (*Höge*).

A little more oblong, and with the elytra relatively longer, than *C. viridis*.

28. Canthon ateuchiceps.

C. deyrollei affinis, sed multo minor, prosterno subtus haud carinato, etc. Læte viridi-æneus, nitidus, sparsim punctulatus; capite sat magno, clypeo antice nigro-cupreo, subtiliter scabroso-punctato, sex-dentato, dentibus 4 medianis late triangularibus; thorace medio late rotundato, margine laterali antice parum arcuato, regione scutellari depresso; elytris haud profunde punctulato-striatis; pygidio (♂) mediocriter convexo, sparsim punctulato; tibiis anticis gradatim dilatatis, posticis subrectis et unicalcaratis.

Long. 6 millim.

Hab. Mexico, Acapulco (*Höge*).

PSEUDOCANTHON.

A gen. *Canthone* differt mesosterno sat elongato, sutura anteriore tamen recta. Oculi supra majores. Tibiæ anticæ ♂ intus sinuatæ. Pygidio subdeflexo.

The considerably longer mesosternum of *Canthon perplexus*, on which this genus is founded, separates it not only from *Canthon*, but from the group of genera to which *Canthon* belongs. The other peculiarities which distinguish the species have already been pointed out by Von Harold. The form of the four hinder tibiæ and tarsi and the proportionate length of the joints of the latter show a nearer relationship to *Canthon* than to the *Epilissus* and *Epirhinus* group; but it seems to form a step in the direction of *Chæridium* rather than to form part of either group.

1. Pseudocanthon perplexus.

Canthon perplexus, Leconte, Journ. Acad. Phil. ser. 1, ii. p. 85 [1]; Horn, Trans. Am. Ent. Soc. 1870, pp. 44 & 46 [2]; Harold, Berl. ent. Zeitschr. 1868, p. 67 [3].

Hab. North America [1 2 3].—Mexico, San Juan Bautista in Tabasco (*Höge*); Guatemala, Paso Antonio (*Champion*); Nicaragua, Chontales (*Janson*).—South America, Amazons (*coll. Bates*).

DELTOCHILUM.

Deltochilum, Eschscholtz, Entomogr. p. 37 (1822); Naturwiss. Abhandl. aus Dorpat, i. p. 93 (1823); Lacordaire, Gen. Col. iii. p. 79.

Hyboma, Lepeletier de Saint-Fargeau & Serville, Encycl. Méth., Ins. x. p. 352 (1825).

Like the preceding genera, peculiar to America, of which continent it constitutes one of the most remarkable and characteristic insect forms. One species extends to temperate latitudes in North America, and two others to the banks of the Plata; but the great majority are confined to the central parts of the tropical zone. Thirty-eight species have been described.

1. Deltochilum parile. (Tab. II. fig. 14, ♂.)

D. furcato affine, sed multo minor, nigro-cæruleus, supra fere opacus; clypeo æqualiter ocellato-punctulato, dentibus approximatis utrinque fere rotundato; thorace medio utrinque vix angulato, supra æquali discreto

punctulato ; elytris striis foveatis parum impressis, interstitiis et foveis striarum (pygidioque) ocellato-punctulatis, carina humerali usque ad medium extensa calloque humerali obtuse carinato, apice 5-carinulatis.
♂. Tibiæ anticæ calcare apicali lato oblique truncato ; ventris segmentis medio paullulum contractis, apicali brevi.
♀. Tibiæ anticæ calcare angusto acuto ; ventris segmentis medio haud contractis, apicali longiore.
Long. 14 millim. ♂ ♀.

Hab. Mexico, Santecomapan (*Sallé*) ; Panama, Volcan de Chiriqui (*Champion*).

The Mexican examples indicate a local variety. They are smaller (10–11 millim.) and have a much closer punctuation (the punctures stronger and ocellated) on the thorax and ventral segments. *D. parile* is remarkable in this genus for the absence of conspicuous sexual differences in the legs, sternum, and abdomen ; with the exception of the spur of the anterior tibiæ (very often worn away), there is no external apparent disparity beyond the slight difference in the sutures of the ventral segments given in the foregoing diagnosis. In colour and sculpture it resembles *D. pretiosum*, Harold, which, besides being more elongate-oblong and larger (17 millim.), presents strongly defined differential characters in the male—the ventral segments 1–4 being consolidated in the middle and without sutures, and the mesosternum having an oblong tubercle in the centre ; the legs, however, remaining without apparent difference.

We figure a male example from the Volcan de Chiriqui.

2. **Deltochilum acropyge.** (Tab. II. fig. 15, ♂.)

Nigrum, subnitidum ; clypeo angustato, concavo, dentibus reflexis approximatis margineque extus valde angulato, sat crebre punctato ; thorace utrinque obtuse angulato, crebre punctulato ; elytris distincte punctato-striatis, interstitiis convexis, undique ocellato-punctulatis, carina humerali brevi calloque humerali valde unicarinato, apice carinis 5 valde elevatis tuberculoque prope suturam ; antennis rufis.
♂. Pygidium elongatum, planum, creberrime ocellato-punctatum, apice acuminato-recurvum ; tibiæ posticæ valde arcuatæ ; venter grosse sparsim punctato, segmentis 2 et 3 medio contractis suturisque subtilibus, flexuosis, suturis 4 et 5 profunde sulcatis ; metasternum apice fovea magna.
Long. 13 millim.

Hab. British Honduras, Belize (*Blancaneaux*). One male example only.

Unlike any other known species in its long, plane pygidium, with the apex upturned and acute. The clypeus also is peculiar in being more prolonged than usual, and narrowed to the front ; the two teeth lie as close together as in some species of *Canthon* ; and on each side the margin is strongly angulated, with an additional short and acute prominence at the suture dividing the clypeus from the genæ. The sides of the thorax in front of the median obtuse angle are straight and simple. The punctuation of the upper surface does not differ from that of the Mexican var. of *D. parile*.

3. **Deltochilum gibbosum.**

Scarabæus gibbosus, Fabr. Syst. Ent. p. 28 [1] ; Oliv. Ent. i. 3, p. 154, t. 16. f. 151 *b*.

Hab. North America, Carolina [1].

Var. *sublæve*. Nitidior ; capite thoraceque haud alutaceis, crebre punctulatis, hoc æqualiter convexo, juxta basin punctis majoribus annularibus ; elytris subtiliter punctato-striatis, interstitiis planis, crebre annulato-

punctulatis, hic illic rugulosis. ♂ major; tibiæ posticæ apice intus lobulato-productæ, femoribus intermediis infra carina elongata.

Long. 22–28 millim. ♂ ♀.

Hab. Mexico, Misantla, Vera Cruz (*Höge*), Santecomapan (*Sallé*).

This Mexican variety agrees with the North-American type-form in the outline of the thorax in both sexes, the sides in both being rotundate-dilate in the middle, and not sinuate either before or behind the dilatation.

4. **Deltochilum lobipes.** (Tab. II. fig. 13, ♂.)

D. gibboso proxime affinis, sed differt thorace medio valde angulato-dilatato, antice et postice (præcipue in maribus) sinuato. Cuprascenti-nigrum, subnitidum; thorace minute et sparsius punctato, limbo grossius annulato-punctato; elytris subtiliter punctato-striatis, interstitiis annulato-punctulatis, medio convexis ibique seriatim nitide granulatis. ♂ major; tibiæ posticæ apice intus incurvæ et late lobatæ lobo apice rotundato; femoribus intermediis subtus carina brevissima.

Long. 22–30 millim. ♂ ♀.

Hab. Mexico, Tehuantepec (*Sumichrast*), Tapachula (*Höge*); Nicaragua, Chontales (*Belt*).

Less typical examples are in the collection from Jalapa and Tampico (*Höge*), but only a single male from each locality. They accord in the strongly angulate and bisinuate sides of the thorax, but differ from the type-form in the elytral interstices being scarcely perceptibly convex and almost destitute of shining granules*.

The figure is taken from a well-developed male example from Tehuantepec.

5. **Deltochilum mexicanum.**

Deltochilum mexicanum, Burm. in D'Alton's Zeitschr. für Zool. i. p. 135 [1].

Hab. Mexico [1], Cordova (*Sallé*), Jalapa, Misantla, Vera Cruz (*Höge*); Costa Rica (*Sallé*, *Van Patten*), Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

* It is interesting to find that the species of *Deltochilum* which represents the North-American *D. gibbosum* in the Amazons region is more nearly allied to the North-American than to the Central-American form, the shape of the thorax being very nearly that of *D. gibbosum*. The following is a description :—

Deltochilum amazonicum.

Obscure nigro-cupreum; thorace medio angulato-dilatato, lateribus ante et post angulum subrectis, crebre annulato-punctato, disco simpliciter punctulato; elytris foveato-striatis, interstitiis subplanis, annulato-punctulatis, medio seriatim nitido-granulatis. ♂ major; tibiæ posticæ apice intus curvatæ, sublobato, lobo apice lato obtuso.

Long. 22–28 millim. ♂ ♀.

Hab. Amazons, Ega, Pebas. Some examples from Pebas have very conspicuous and elevated rows of shining granules on the elytral interstices.

The females of this species, as well as of *D. lobipes* and *D. gibbosum*, var. *sublæve*, vary like the males in degree of development, and sometimes have rudimentary elytral bosses. All have rudiments of a tooth underneath the anterior tibiæ, which are narrow and sharply bent, almost as in the males, and the deep fossa of the metasternum is also present, but in a rudimentary state. The only constant sexual differences of outer structure lie in the ventral segments and the apex of the hind tibiæ: the former being consolidated in the middle in the male, free in the female; and the latter produced, with an apparently short spur, in the male, and truncated, with a long spur, in the female.

Mexican examples (of which I have seen only seven) are dull bluish-black. Burmeister says "viridi-atrum, opacum." All the numerous specimens received from Costa Rica and Chiriqui are of a rich dark blue colour. Well-developed males have a moderately-elevated umbo. The species belongs to a section of the genus (Burmeister's Section III.) in which the "carina humeralis" is absent, and in apparent compensation the short carina on the humeral callus is strongly developed. The true relation of this carina is evident when the interstices are counted, it being situated on the seventh from the suture (the position of the callus), whilst the humeral carina is at the base of the ninth, close to the eighth stria.

The carina exterior to the humeral one, which is the upper edge of the epipleura, is strongly flexuous in those species which have a humeral carina, but becomes straight in those in which it is absent, viz. in *D. mexicanum* and allies.

The male in *D. mexicanum* is distinguished from the female by very slight characters; the sutures of the ventral segments are equally developed in both sexes, the segments in the male being only a little more contracted in the middle; but the hind femora have an obtuse tooth beneath near the apex, which is wanting in the female.

6. **Deltochilum scabriusculum.** (Tab. II. fig. 16, ♀.)

D. dentipedi (Eschsch.) proxime affinis; multo minor; capite et thorace nitidis, crebre æqualiter punctatis; elytris punctulato-striatis, interstitiis passim subvermiculato-rugosis punctisque intermixtis, lateribus utrinque bicarinatis.

♀. Femora antica subtus unidentata; tibiæ posticæ medio subangulatim incurvatæ.

Long. 23–25 millim. ♂ ♀.

Hab. Mexico, Tlacotalpam (*Sallé*), Jalapa, Cuernavaca, Misantla, Tapachula in Chiapas (*Höge*); Guatemala, Coban in Vera Paz (*Champion*).

Belongs to Burmeister's Section I., hitherto containing one species only. It differs from *D. dentipes*, besides its more oblong form and punctured head and thorax, in wanting the strongly-marked male peculiarities in the anterior and posterior tibiæ and ventral segments exhibited by that species. Burmeister gives as a character of Section I., "Elytris in margine externo bicarinatis," but does not point out the singular homological relationship of the carinæ to those of the rest of the genus. In fact, the usual short humeral carina becomes here the margin of the elytra, and runs from the base nearly to the apex, the true marginal carina, *i. e.* the upper edge of the epipleura, being removed to the middle of what consequently becomes an epipleura, augmented by the addition of one of the normally dorsal interstices. In correlation with this the remaining dorsal interstices are expanded laterally. The second carina is nothing but the elongation of the outer carina on the apical callus. The humeral callus on the same (seventh) interstice is absent.

An example from Tlacotalpam is figured.

SISYPHUS.

Sisyphus, Latreille, Gen. Crust. et Ins. ii. p. 79 (1807); Lacordaire, Gen. Col. iii. p. 72; Lansberge, Ann. Soc. Ent. Belg. xvii. p. 192.

A well-known Old-World genus, ranging from Southern Europe through the whole of Southern Asia (including Ceylon), and through Africa to the Cape of Good Hope. It appears not to be known in the Malay Archipelago, Australia, or in any Oceanic Island; but reappears in Mexico and Central America in a single species. The Mexican species, contrary to what might be expected, offers no marked peculiarity to distinguish it from the ordinary type of the Old-World members of the genus, and in fact is closely allied in form and sculpture to the Indian *S. longipes* (Oliv.). The conclusion is scarcely to be avoided that the species has followed man in his migrations.

1. Sisyphus mexicanus.

Sisyphus mexicanus, Harold, Ann. Soc. Ent. Fr. 1863, p. 172 [1].

Hab. Mexico [1], Tuxtepec (*Sallé*), Tehuantepec (*Sumichrast*), Misantla, Jalapa (*Höge*); Nicaragua, Chontales (*Belt*).

EURYSTERNUS.

Eurysternus, Dalman, Ephem. Entom. p. 8 (1824); Lacordaire, Gen. Col. iii. p. 106; Lansberge, Ann. Soc. Ent. Belg. xvii. p. 192.

Twenty-three species of this very distinct and peculiar genus are known, all Tropical American.

1. Eurysternus claudicans.

Eurysternus claudicans, Kirsch, Berl. ent. Zeitschr. 1870, p. 360 [1]; Harold, Stett. ent. Zeit. 1880, p. 13 [2].

Hab. Nicaragua, Chontales (*Belt*, *Janson*), Rio de San Juan (*Janson*); Panama, Volcan de Chiriqui (*Champion*).—South America, Colombia [1 2], Amazons.

Kirsch describes one sex only; apparently from a single example, 15 millim. long. The species varies in size from 14 to 22 millim. The rufescent elytra described by him is the result probably of immaturity; most of our examples are above of a dull olive-black, and beneath dark glaucous-green. In the male the hind tibiæ are angularly bent and laterally flexuous, in some examples to an extraordinary degree, and armed beneath with a large bicuspid tooth before, and two separate teeth behind, the middle, the large tooth sometimes much reduced or entirely wanting, the apex pointed and without spur. In the female the hind tibiæ are simply arcuated, with a few small denticulations beneath, the apex with a long free spur.

2. Eurysternus velutinus. (Tab. II. fig. 17.)

E. claudicanti similis; elongato-oblongus, supra fusco-niger, subsericeo-opacus, brevissime nigro-setosus, subtus

et pedes viridi-ænei vel cuprei; capite remote punctulato, clypeo vix depresso, integro; thorace versus apicem subdilatato, creberrime sed discrete ocellato-punctato, æqualiter convexo, prope scutellum paullo depresso; elytris moniliato-striatis, interstitiis nigro setulosis; corpore subtus fere lævi, abdomine apice femoribusque valde punctatis; mesosterno medio longitudinaliter depresso.

♂. Tibiæ anticæ subtus unidentatæ; tibiæ posticæ intus paullulum flexuosæ, 8-tuberculatæ, apice intus mediocriter productæ, ecalcaratæ; abdomine basi lato concavo.

♀. Tibiæ anticæ subtus inermes, posticæ simplices; abdomine convexo.

Long. 18–22 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).—South America, Cayenne, Amazons.

Of similar large size and elongate-oblong form to *E. claudicans*; but differing from that species by its opaque velvety upper surface, and rich coppery or brassy-green subsericeous under surface, with the legs wholly also metallic. The secondary sexual characters as above indicated are also entirely different. As in *E. claudicans*, the marginal carina of the elytra, formed by the upper edge of the epipleuræ, is not elevated as in the species allied to *E. planus*; and the humeral carina is very short and obtuse, and not continued beyond the point where the epipleural margin curves upward from the base.

3. **Eurysternus magnus.** (Tab. II. fig. 18.)

Eurysternus magnus, Casteln. Hist. Nat. Ins. Col. ii. p. 93 [1].

Hab. Mexico [1], Cordova (*Sallé*, *Höge*), Jalapa (*Höge*), Juquila (*Sallé*); Guatemala, Cerro Zunil (*Champion*); Costa Rica (*Van Patten*), Volcan de Irazu, Cache, Rio Sucio (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

♂. Tibiæ anticæ intus multi-denticulatæ, subtus sicut in ♀ inermes; metasternum apice tuberculo conico; tibiæ posticæ valde arcuatæ, intus multi-tuberculatæ.

Most examples are uniform opaque, sooty black above, with brassy-black legs; but in others the elytra are more or less variegated with dull red. In both sexes the metasternum has a rounded fovea in the centre, and the hind femora a strong spine beneath towards the apex. The humeral carina of the elytra is prolonged to three-fourths of the elytral length, and overtops the lateral carina, *i. e.* the upper edge of the epipleura, except towards the apex.

We figure a specimen from Juquila.

4. **Eurysternus nebulosus.**

Eurysternus nebulosus, Kirsch, Berl. ent. Zeitschr. xiv. p. 361 (1870) [1].

Hab. Nicaragua, Chontales (*Belt*).—South America, Colombia [1], Amazons.

Compared by Kirsch with *E. mexicanus*, but much more nearly allied to *E. planus*, Dalm., having, like that species, a very short humeral carina, and an acute strongly elevated epipleural carina. From *E. planus* it differs in the male only having a spine underneath the hind femora (in *E. planus* the spine exists in both sexes); and in the

metasternum being unarmed between the hind coxæ, instead of having a compressed and acute tubercle. Dalman says "Sterno inter pedes anticos in spinam producto," but *anticos* is evidently here a slip for *posticos*.

5. **Eurysternus mexicanus.**

Eurysternus mexicanus, Harold, Ann. Soc. Ent. Fr. 1869, p. 505 [1]; Stett. ent. Zeit. 1880, p. 14 [2].

Hab. Mexico [1], Cordova (*Sallé*, *Höge*), Playa Vicente, Cosamaloapam, Santecomapan (*Sallé*), Misantla, Jalapa, Tampico (*Höge*); Guatemala, Panzos, San Joaquin in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Bugaba, David, San Feliz (*Champion*).—South America, Colombia [2].

In this species the lateral carina is formed by an extension of the humeral carina, which behind reaches the apical callus and conceals (viewed from above) the epipleural carina.

6. **Eurysternus plebejus.**

Eurysternus plebejus, Harold, Stett. ent. Zeit. 1880, p. 14 [1].

Hab. Nicaragua, Chontales (*Janson*); Panama, Bugaba, David (*Champion*).—South America, Colombia [1], Ecuador, Amazons.

Agrees with *E. mexicanus* in the nature of the lateral carinæ of the elytra; but the epipleural carina is rather more strongly curved upwards, and approximated to the more obtuse inner carina—a peculiarity pointed out by Von Harold, though he does not compare the structure with that of *E. mexicanus*. The species is much smaller than *E. mexicanus*, and differs in the hind femora not showing the remarkable dilatation and compression of that species.

Von Harold describes the female only. The metasternum is similar in both sexes, having a round central fovea, with an obtuse carina thence to the apex; but the hind femora present a singular sexual peculiarity in having a strong spine beneath in the female, and being unarmed in the male. The hind tibiæ (♂) are not greatly prolonged on the inner side at the apex as in other species, but are spurless.

7. **Eurysternus angustulus.** (Tab. II. fig. 19.)

Eurysternus angustulus, Harold, Ann. Soc. Ent. Fr. 1869, p. 506 [1].

Hab. Mexico (*Sallé* [1]).

One example only, a male labelled "typus" in Von Harold's handwriting in the Sallé collection. The species is allied to *E. impressicollis*, Casteln., from Colombia; in both the thorax is very uneven, and the hind tibiæ in the male prolonged at the apex into a long and sharp spine, simulating a spur. The spine is very much longer and more spur-like in the Colombian species.

AGAMOPUS.

Gen. *Aphengio* affinis; differt elytris margine haud carinatis, tibiis posticis ♂ apicem versus angustatis, etc. Oblongus, subdepressus, glaber. Oculi supra magni. Thorax fovea laterali obsoleta. Tibiæ setosæ; apice rectæ truncatæ; intermediæ (et ♀ posticæ) gradatim et mediocriter dilatatæ, posticæ ♂ versus apicem angustatæ apiceque intus in spinam longam obtusam productæ. Tarsi graciles, vix compressi, 4 posterioribus articulo basali parum elongato; ungues valde elongati, tenues. Mesosternum elongatum, sutura postica subtili subangulata. Pygidium brevissimum.

A genus allied to *Uroxys* and *Aphengium*, but distinguished from both and from all other "Chœridiinæ" by the form of the posterior tibiæ, which in their gradual dilatation are somewhat intermediate between those of *Chœridium* and *Canthon*, and in the remarkable form they assume in the hindmost pair of the male resemble those of no other genus. The hind femora of the male have on the under surface a straight, finely-serrated edge, ending before the apex in a short sharp tooth.

1. **Agamopus lampros.** (Tab. II. fig. 20, ♂.)

Niger vel castaneo-fuscus, politissimus, pedibus castaneo-rufis; clypeo bidentato et vix punctato, fronte et vertice politis; thorace brevi et lato, disco subtilissime, lateribus fortius disperse, punctatis, margine laterali rotundato, basi immarginato; elytris subtiliter striatis, striis distanter crenato-punctulatis, interstitiis planis, lævibus; mesosterno, metasterni lateribus abdominisque segmentorum marginibus grosse punctatis; pygidio brevi.

Long. 4½ millim.

Hab. Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).

APHENGIUM.

Aphengium, Harold, Col. Hefte, iii. p. 54 (1868).

The only species of this genus hitherto described is from Monte Video.

1. **Aphengium semi-nudum.** (Tab. II. fig. 21.)

Oblongum vix ovatum, parum convexum, nigro nitidum (interdum subæneum), setulis brevissime obsitum, supra undique subæqualiter discrete punctulatum; clypeo medio obtuse unidentato vel sub-bidentato; thorace æqualiter parum convexo, fovea laterali vix impresso, margine laterali subrecto, prope angulos anticos citius curvato; elytris subtilissime punctulato-striatis; corpore subtus femoribusque, metasterno medio sparsius et subtilius, abdomine pygidioque crebrius, punctatis; tarsis posticis latis, compressis, dense rufo ciliatis, articulo 1° breviter triangulari; pygidio retracto, subhorizontali.

Long. 6–7½ millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

The marginal carina of the elytra is sharper than in *A. sordidum*, and is continuous from the rectangular (almost acute) shoulders to the sutural apex. The short and broad, compressed and subtriangular tarsal joints are a remarkable distinguishing feature. The anterior cavity of the prosternum is exceedingly deep.

A specimen from the Volcan de Chiriqui is figured.

UROXYS.

Uroxys, Westwood, Trans. Ent. Soc. Lond. ser. 1, iv. p. 229 (1842); Harold, Col. Hefte, iii. p. 33 (1868).

Seventeen species of this curious little genus, confined to Tropical America, have been described.

1. **Uroxys micros.** (Tab. II. fig. 22.)

U. pygmæo (Harold) affinis, paullo major, elytris perspicue crenato-striatis, etc. Oblongo-ovatus, nigro-æneus vel ferrugineus, politus; clypeo bidentato, juxta dentes leviter sinuato nec subdentato, vix punctulato, vertice lævi; thorace lævi, sulco submarginali profundo, basi immarginato, distanter punctato; elytris striatis, striis versus latera et apicem profundioribus, distanter crenato-punctatis; pygidio basi sulco semicirculari profundissimo.

Long. 4–4½ millim.

Hab. GUATEMALA, La Gavia 2000 feet (*Champion*).

The singular curved sulcus on each side of the base of the pygidium exists in *U. pygmæus*, but it is broader and deeper in the present species. The sides of the thorax exterior to the marginal furrow are also more convex in *U. micros* than in *U. pygmæus*. The eyes above are large and the mesosternal suture angulated, as in the rest of the genus.

2. **Uroxys aphodioides.**

U. elongato (Harold) affinis; minus convexus, niger, nitidus, vertice cuprascente; capite fere lævi, vertice valide bidentato, fronte tuberculo conico; thorace (elytris latioribus) subtilissime punctulato, sulco laterali flexuoso margineque medio angulato et antice arcuato, basi punctato-marginato; elytris crenato-striatis, interstitiis convexis; corpore subtus impunctato; mesosterno longissimo, sutura parum angulato; pygidio valde convexo, politissimo; tibiis 4 posticis extus irregulariter dentatis.

Long. 10 millim. ♀?

Hab. NICARAGUA (*coll. Bates*).

One example, which, from the absence of curvature in the anterior tibiæ, I judge to be a female. It was obtained, I think, from Dr. Seemann's collections made at Javali. It resembles *U. elongatus* in little except the uni-tuberculate forehead.

3. **Uroxys rodriguezi.**

Uroxys rodriguezi, Preudhomme de Borre, Ann. Soc. Ent. Belg. xxx. p. 107 (1886)[1].

Hab. GUATEMALA [1].

SCATIMUS.

Scatimus, Erichson, Archiv für Naturg. 1847, i. p. 110.

A genus peculiar to Tropical America. Three species only have been described.

1. **Scatimus ovatus.** (Tab. II. fig. 23.)

Scatimus ovatus, Harold, Berl. ent. Zeitschr. 1862, p. 401[1].

Hab. Mexico[1], Cuernavaca, Cordova, Toxpam, Playa Vicente (*Sallé*), Juquila, Chilpancingo (*Höge*); Panama, Bugaba, Volcan de Chiriqui, David, Tolé (*Champion*).

An example from the Volcan de Chiriqui is figured.

2. **Scatimus patruelis.**

Scatimus patruelis, Preudhomme de Borre, Ann. Soc. Ent. Belg. xxx. p. 108 (1886)[1].

Hab. Mexico[1].

CHŒRIDIUM.

Chœridium, Lepeletier de Saint-Fargeau & Serville, Encycl. Méth., Ins. x. p. 356 (1825); Lacordaire, Gen. Col. iii. p. 93; Harold, Col. Hefte, iv. p. 32 (1868).

A genus, so far as at present known, peculiar to America. The great majority of its species belong to the tropical regions of the continent, and only a few inhabit the temperate zones north and south. Nearly forty species have been described.

1. **Chœridium illæsum.**

Chœridium illæsum, Harold, Col. Hefte, iv. p. 53[1].

Hab. Mexico[1], Tuxtla (*Sallé*), Tonila in Colima, Jalapa (*Höge*).

Belongs to a group of closely-allied species, of which the well-known *C. capistratum* of North America may be taken as the type. It is larger than *C. capistratum* and more oblong. According to a specimen in the Sallé collection labelled *C. illæsum* in Von Harold's handwriting, it is distinguished from that and most other nearly-related species by the nearly plane pygidium ("leviter convexum" according to Von Harold), the scarcely widened last ventral segment and the faintly punctured fore margins of the other ventral segments. The thorax is smooth, except in the middle of the base, which is narrowly margined. As to the obsoletely-punctured elytral striæ adduced by Harold as a distinguishing character, this seems to be variable, the striæ (especially towards the sides) being sometimes as strongly crenate-striate as in the allied forms.

2. **Chœridium chrysopyge.**

C. illæso proxime affine; majus, aterrimum, politum; pygidio plano, medio vix perspicue carinato, viridi-aurato splendidissimo, oblongum; thorace margine laterali prope angulos anticos verticaliter arcuato, basi anguste marginato et crenato-punctato, medio linea dorsali impresso; elytris crenato-striatis (apice striis profundius exaratis), interstitiis fere planis; corpore subtus nigro, femoribus 4 posticis cuprascentibus, segmentis ventralibus planis, subtiliter annulato-punctatis; antennis fulvo-testaceis.

Long. 8–10 millim.

Hab. Guatemala, San Gerónimo (*Champion*).

A large number of examples, all alike except in size. The species differs from

C. illæsum in very little except size and colour; the central carina of the pygidium is very faint, and visible only in certain lights, or in some female examples quite obsolete. In well-developed individuals the pygidium, under a lens, appears finely and sparsely punctured.

3. **Chœridium klugi.**

Chœridium klugi, Harold, Col. Hefte, iv. p. 56[1].
? *Chœridium nitidulum*, Casteln. Hist. Nat. Ins. Col. ii. p. 83[2].

Hab. Mexico[1 2], Cordova (*Sallé*).

Von Harold gives the size as $3\frac{3}{4}$–4 lines, but a specimen I received from him named *C. klugi* measures barely 3 lines; the size given by Castelnau for *C. nitidulum*, viz. $2\frac{2}{3}$ lines, is therefore no reason for excluding his species from the synonymy, though his description is too vague to be relied on. Specimens named *C. nitidulum*, Casteln., in the Sallé collection measure $2\frac{1}{2}$ and 3 lines, and agree with Von Harold's named example and with his description. The form is oblong, as in *C. illæsum*, and the pygidium is only a very little more convex than in that species, with which the minutely punctured bases of the ventral segments also agree. The species is barely distinguishable by its rather more convex elytral interstices, deeper and more strongly crenated striæ, and strongly impressed dorsal lines of the thorax, the base of which is very finely margined.

4. **Chœridium guatemalense.** (Tab. II. fig. 24*.)

C. klugi quam maxime affine; differt pygidio valde convexo thoraceque toto haud profunde punctato. Oblongum, nigrum, nitidum, leviter metallicum; thorace toto, versus basin grossius, punctulato, linea dorsali postice impressa, medio basi depresso; elytris lateribus vix rotundatis, perspicue crenato-striatis, interstitiis leviter (præcipue versus latera) convexis; pygidio valde convexo, lævissimo, sulco profundo marginato; segmentis ventralibus basi parum punctatis, apicali lato et lævi metallico.
Long. $5\frac{1}{2}$–$7\frac{1}{2}$ millim.

Hab. Guatemala, El Tumbador, Volcan de Atitlan, Pantaleon (*Champion*).

The sexual characters are the same as in *C. illæsum*. The punctuation of the thorax is as well marked as in *C. capistratum*, and a little stronger in the female than in the male.

Taken by Mr. Champion in great abundance.

The elytral striæ, as in all other species of the *C. capistratum* group, are deepened and broadened towards the apex, before which they terminate. The base of the thorax appears to be immarginate, but on close inspection a narrow line is in some examples seen at a little lower level than the apparent base.

5. **Chœridium ampliatum.** (Tab. II. fig. 25.)

Latius ovatum, sed elytris multo minus quam in *C. capistrato* ampliatis. Nigrum, nitidum, viridi-æneo vel

* By an oversight the name of the genus is given as *Chœridium* on the Plate.

cupreo tinctum ; thorace (medio basi punctata excepta) lævi vel obsoletissime punctulato, linea impressa dorsali nulla, basi immarginato ; elytris crenato-striatis, interstitiis fere planis ; pygidio parum convexo, lævissimo, sulco marginali grosso et profundo ; segmentis intermediis ventralibus basi (præcipue ad latera) longitudinaliter punctatis, apicali lato, lævi.

Long. 7 millim.

Hab. Mexico, Presidio (*Forrer*), Panistlahuaca (*Sallé*), Juquila (*Höge*) ; Nicaragua (*Sallé*).

Distinctly broader relatively to the length than *C. illæsum*, *C. klugi*, and *C. guatemalense* ; broader even than *C. capistratum*, but with less dilated and rounded elytra than that species, and the base of the thorax wholly immarginate. The numerous examples from Juquila, and others from Panistlahuaca, are greenish-brassy-black, those from Nicaragua coppery, and all are glossy. The pygidium varies a little in convexity, but is never nearly plane as in *C. illæsum*, nor strongly convex as in *C. guatemalense*.

A specimen from Juquila is figured.

6. Chœridium candezei.

Chœridium candezii, Harold, Col. Hefte, iii. p. 82 ; iv. p. 71 [1].

Hab. Panama [1] (*coll. Bates, specim. typico*).

7. Chœridium poropyge.

C. candezei proxime affine ; differt pygidio toto polito, convexo, medio fovea elongata impresso. Oblongo-ovatum, elytris sat rotundatis ; capite thoraceque cupreis, nitidis ; elytris piceo-nigris (basi excepta), opacis ; clypeo margine solum punctato ; thorace transversim quadrato, lævi, linea dorsali basali profunde impresso ; elytris versus apicem planatis, acute sat profunde striatis, striis obsoletissime crenatis prope apicem perparum profundioribus ; ventris segmentis intermediis margine anteriore crenatis, apicali dilatato et politissimo.

Long. $7\frac{1}{2}$ millim.

Hab. Nicaragua, Chontales (*Belt*).

Closely allied to *C. candezei* and *C. simplex*, but differing from both in the whole surface of the pygidium being polished, and, further, in the centre being marked with an impressed line or elongated fovea, which in one of the two examples is constricted in the middle. The three species belong to a group which differs from the *C. capistratum* series only in the elytral striæ not being distinctly broader and deeper near the apex. In both the apical border of the elytra forms a wheal or callus on which the striæ terminate before the apex itself.

8. Chœridium æneo-micans.

Chœridium æneomicans, Harold, Col. Hefte, iii. p. 82 ; iv. p. 66 [1].

Hab. Panama, Bugaba, Volcan de Chiriqui, Peña Blanca (*Champion*).—South America, Amazons [1].

Some of Mr. Champion's specimens are of the colour of the type-form, "viridi-

æneum, subauratum;" some are dark metallic-green, and others brilliant red-coppery.

CANTHIDIUM.

Canthidium, Erichson, Archiv für Naturg. 1847, i. p. 109; Harold, Col. Hefte, i. p. 10; ii. p. 60.

A genus of small Copridæ; like *Chœridium*, peculiar to America and still more numerous in species. The range is somewhat different from that of the *Chœridia*, inasmuch as it does not extend to temperate latitudes in North America, although many species occur in the southern temperate zone; and one, apparently a recent colonist, occurs in the Sandwich Islands. In general the species have nearly the same facies as the *Chœridia*, and many are only to be distinguished on close examination of their structural characters. In cases of doubt the very short mesosternum is the best guide, this segment being long in *Chœridium* and separated from the metasternum by an arcuated suture. Nearly ninety species have been described.

1. **Canthidium haroldi.** (Tab. III. fig. 1.)

Canthidium haroldi, Preudhomme de Borre, Ann. Soc. Ent. Belg. xxx. p. 111 (1886)[1].

C. lucido (Harold) affine, differt inter alia fronte bituberculata. Rotundato-ovatum, viridi vel cupreo-auratum, politum; capite punctulato, clypeo nigro et obtuse bidentato, fronte carina brevi obtusa bituberculata; thorace post medium rotundato-dilatato, subtiliter punctulato (disco læviore), basi punctis elongatis marginato, linea dorsali leviter impressa; elytris striatis, striis distanter crenato-punctulatis; subtus pedibusque metallicis; pygidio subtiliter punctulato et alutaceo; antennis pallidis.

♂. Differt tantum tibiis anticis longioribus et angustioribus. Prosternum subtus nullo modo carinatum.

Long. 6–10 millim.

Hab. Nicaragua[1], Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).

This insect is most nearly related to *C. steinheili*, Harold, and a bluish-black species from Colombia.

I retain the description written before receiving M. Preudhomme de Borre's paper, as it is drawn up from a large series of examples, M. de Borre having at his disposal only one rather small (7 millim.) specimen.

We figure an example from Bugaba.

2. **Canthidium puncticolle.** (Tab. III. fig. 2.)

Canthidium puncticolle, Harold, Col. Hefte, i. p. 39[1].

Hab. Mexico[1], Pinos Altos in Chihuahua (*Buchan-Hepburn*), Cordova, Puebla, Tuxtla (*Sallé*), Cerro de Plumas (*Höge*); Guatemala, San Joaquin in Vera Paz (*Champion*).—South America, Brazil[1].

In *C. puncticolle* the inner apex of the anterior tibiæ is in the male produced and dentiform, in the female simple; but the spur is slender in both sexes.

3. **Canthidium aurifex.** (Tab. III. fig. 3, ♂.)

C. rutilo (Harold) proxime affinis; differt ♀ tibiis anticis intus apice haud productis. Breviter oblongo-ovatum, splendide viridi-æneum vel cupreum aureo relucens; capite punctulato, clypeo breviter bidentato, fronte trituberculata; thorace subtilissime haud dense punctulato, lateribus prope foveam tumidis; elytris punctato-striatis, interstitiis subtilissime rugulosis; pygidio fortius punctato; pedibus metallicis.

♂. Tibiæ anticæ apice intus acute productæ; calcare dilatato, apice truncato vel bifido.

♀. Tibiæ anticæ apice intus rectæ nec productæ; calcare gracili, acuto.

Long. 3½–5 millim.

Hab. Panama, Bugaba (*Champion*).

The South-American *C. rutilum* is similar in size, colour, and sculpture to this insect, but differs in the inner apex of the anterior tibiæ being produced into a triangular tooth in both sexes. It appears also to be rather shorter and more spherical in shape.

4. **Canthidium ardens.**

C. rutilo et *C. aurifici* simile. Supra et subtus cupreo-auratum, politum; clypeo rugulosum, fronte trituberculata; thorace lævi, medio basi punctulato; elytris subtiliter striatis, striis impunctatis; pygidio subtilissime punctato.

♂. Tibiæ anticæ apice intus dentiformiter productæ et deflexæ; calcare sicut in ♀ gracili acuminato.

♀. Tibiæ anticæ apice intus acute angulatæ.

Long. 3½–5 millim.

Hab. Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Differs from the numerous closely-allied species of similar form and size and brilliant metallic colouring by its faintly impressed elytral striæ, in which there is no trace of the accustomed transverse punctures, except in rare cases when a few are perceptible in the sutural stria. Mr. Champion collected a very large series of the species, more females than males, all of the same golden-coppery colour with green reflection in certain lights. The following local variety differs only in colour.

Var. *C. mutatum.* Saturate viridi-æneum, splendidum; corpore subtus et pedibus concoloribus.

Hab. Costa Rica (*coll. Bates*).

One example.

5. **Canthidium rhodopus.**

Parvum, fere orbiculare, chalybeo- vel æneo-nigrum, antennis et pedibus testaceo-rufis; supra (elytris subtilius) punctulatum; fronte tuberculata, clypeo bidentato et utrinque flexuoso; elytris subtilissime striatis, striis distanter punctulatis.

Tibiæ anticæ apice intus dentiformiter productæ et deflexæ; calcare (utroque sexu?) gracili.

Long. 4 millim.

Hab. Guatemala, Zapote (*Champion*).

In structure most nearly allied to *C. ardens*, but in colour and punctuation more

nearly resembling *C. puncticolle*. The elytral striæ are very faintly impressed and marked at distant intervals with minute punctures; the interstices rather closely and very finely punctured, besides being minutely shagreened. The thorax is more strongly punctured, but less so than in the ordinary blue Mexican form of *C. puncticolle*. The clypeus is rather coarsely and subrugosely punctured (far more so than in *C. ardens*), the vertex behind less densely punctured.

6. **Canthidium lætum.**

Canthidium lætum, Harold, Col. Hefte, i. p. 53[1].

Hab. MEXICO[1]; GUATEMALA, Senahu (*Champion*).

According to the description this species must be similar to *C. aurifex* in form and sculpture, having a trituberculate forehead, smooth thorax, and crenate-striate elytra, in which the sutural stria is more deeply impressed than the others; the colour differing in being bright green or slightly coppery-green. This description nearly suits a species of which Mr. Champion met with two examples in Guatemala; but I have seen no Mexican specimens to fit it. A specimen labelled *C. lætum*, in Von Harold's handwriting, in the Sallé collection does not at all agree with the description, the forehead being unarmed, the thorax as strongly punctured as in *C. puncticolle*, and the sutural stria not more deeply impressed than the others.

7. **Canthidium ——?**

Hab. PANAMA, Bugaba (*Champion*).

A single example $2\frac{3}{4}$ millim. long, possibly a dwarfed individual of *C. ardens*, but with the forehead unarmed.

8. **Canthidium ——?**

Hab. GUATEMALA, Senahu (*Champion*).

Also a single example of difficult determination, only $3\frac{1}{2}$ millim. long, the forehead unarmed; the sculpture of the elytra similar to that of *C. lætum*, but the colour brilliant red-coppery.

9. **Canthidium angusticeps.** (Tab. III. fig. 4.)

C. lucido et *C. haroldi* simile, sed differt capite angustiore; clypeo elongato, supra concavo, et margine utrinque sinuato. Supra et subtus rubro-cupreum, nitidum, elytris viridi-relucentibus; capite discrete subtilissime punctulato, fronte breviter carinata et sub-bidentata; thorace medio basi triangulariter sublobato et depresso, linea dorsali parum impressa, basi rotundato-punctulata nec marginata; elytris crenato-striatis, interstitiis fere planis; pygidio punctato, basi subruguloso; metasterno basi dense punctulato.

♀? Tibiæ anticæ valide tridentatæ, apice obliquis; calcare elongato validissimo.

Long. $5\frac{1}{2}$–8 millim.

Hab. Nicaragua, Chontales (*Janson*); Panama, Bugaba (*Champion*).

A species differing in the form of the head from the typical members of the genus. The punctures along the base of the thorax are not elongate as in Von Harold's Group I., but small and rounded, and not forming a distinct margin. In some points of structure the species approaches *Scatonomus*; but the hind tarsi are not so broad and compressed as in that genus, although the first and second joints are broader than usual in *Canthidium*.

ONTHERUS.

Ontherus, Erichson, Archiv für Naturg. 1847, i. p. 107; Lacordaire, Gen. Col. iii. p. 98.

Nearly twenty species of this genus have been described; it has a range similar to that of the *Canthidia*, that is, restricted to the tropical and south temperate zones of the American continent.

1. Ontherus azteca.

Ontherus azteca, Harold, Ann. Soc. Ent. Fr. 1869, p. 503 [1].

Hab. Mexico, Cordova [1], Oaxaca (*Sallé*).

The type-specimen (♀) in the Sallé collection is the only one I have seen of this insect. The species is rather elongate and robust, distinguished by the deeply impressed and punctured dorsal line of the thorax. The clypeus is entire, and the forehead armed with a conical tubercle as in the female of *O. sulcator* (Fabr.). The front of the thorax is declivous, with indications of two obtuse tubercles on the edge of the declivity, and the sides present a reniform elevation below the fovea similar to that of *O. quadratus*. The metasternum is convex, furrowed down the middle, and strongly punctured and reddish-hairy on the sides.

2. Ontherus mexicanus. (Tab. III. figg. 5, ♂; 5*a*, side view of head and thorax.)

Ontherus mexicanus, Harold, Col. Hefte, iv. p. 80 (♀); Ann. Soc. Ent. Fr. 1869, p. 503 (♂) [1].

Hab. Mexico, Cordova (*Sallé* [1]), Talacingo (*Höge*); Costa Rica (*Sallé*).

3. Ontherus didymus.

Ontherus didymus, Erichs. Archiv für Naturg. 1847, i. p. 108 [1].

♂. Oblongus, niger, elytris interdum subopalescentibus; clypeo medio leviter emarginato, ruguloso, vertice cornu valido acuto; thorace subtiliter sat dense punctulato, antice declivi et 4-tuberculato (tuberculis intermediis approximatis), linea dorsali obsoleta, fovea laterali extus leviter tuberculata; elytris punctato-striatis striisque utrinque crenatis; pygidio segmentoque ultimo ventrali crebre punctatis; metasterno convexo, lateribus sparsim punctatis; tibiis anticis tridentatis.

Var. 1. Cornu verticis elevato, lato, apice bifido; thorace antice 4-tuberculato.

Var. 2. Cornu verticis vix elevato, lato, binodoso; thorace antice haud declivi, obsolete bituberculato.

Hab. Mexico, Oaxaca (*Sallé*); Guatemala, Cubilguitz (*Champion*); Nicaragua,

Chontales (*Belt*); Costa Rica, Volcan de Irazu, Rio Sucio (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America, Eastern Peru [1].

The varieties or lower developments of the male are not distinguishable from the female otherwise than by the tridentate anterior tibiæ.

Erichson's description fits exactly the common form of the female of this widely-distributed species, in which the edge of the thoracic declivity has two obtuse tubercles. Well-developed and rarer individuals of the same sex have four, as in *O. mexicanus*, ♀, from which they are distinguishable only by the shallower crenate-punctate striæ of the elytra. The thorax has no dorsal impressed line and the lateral fovea is simple. The male differs widely from the corresponding sex of *O. mexicanus*.

4. **Ontherus brevipennis.** (Tab. III. fig. 6.)

Ontherus brevipennis, Harold, Col. Hefte, ii. p. 97 [1].

Hab. Panama (*M'Leannan*).—South America, Colombia [1].

PINOTUS.

Pinotus, Erichson, Archiv für Naturg. 1847, i. p. 108; Lacordaire, Gen. Col. iii. p. 98.

A genus peculiar to the American continent, and of wide distribution in temperate as well as in tropical latitudes. Sixty species have been described.

1. **Pinotus yucatanus.** (Tab. III. fig. 9, ♀.)

Inter minores; piceo-niger, nitidus; clypeo bidentato, ruguloso, vertice punctato impresso, tuberculo conico obtuso; thorace fere lævi, basi sulculo sat acuto lævi usque ad marginem lateralem continuato nec dilatato et omnino impunctato, angulis posticis distinctis, margine laterali ante angulum sinuato; elytris sat profunde striatis, striis subtiliter crenato-punctulatis, interstitiis convexis; metasterno basi et lateribus sparse grosse setifero-punctato.

♂? Sat anguste oblongo-ovatus.

♀? Late oblongo-ovata.

Long. 12–15 millim.

Hab. Mexico, S.W. Yucatan (*Dr. Horn, coll. Bates*); Nicaragua, Chontales (*Belt*).

Belongs to the group of small species, with undifferentiated sexual characters in the armature of the head and thorax, of which many have been insufficiently described. The present species seems to be very similar to *P. inachus* of Erichson, the vertex having a shallow depression behind the simple and short tubercle, as I infer from the description of that author, "capite ruguloso, tuberculo frontali postice impresso;" a description equally applicable if it refers to the tubercle, which in the male is concave behind. Erichson, however, does not mention the marginal groove of the thorax, the narrowness and perfect smoothness of which are very characteristic of *P. yucatanus*, the numerous allied species from the northern parts of South America which I have examined having the groove punctured or punctured and widened. A female specimen from Yucatan is figured.

2. **Pinotus amplicollis.** (Tab. III. figg. 10, ♂; 10 *a*, side view of head and thorax.)

Pinotus amplicollis, Harold, Ann. Soc. Ent. Fr. 1869, p. 501 [1].

Hab. Mexico, Pinos Altos in Chihuahua, Alamos (*Buchan-Hepburn*), Presidio, Ventanas (*Forrer*), Oaxaca and Puebla (*Boucard* [1]), Panistlahuaca (*Sallé*); Guatemala, Tamahu in Vera Paz (*Champion*).

A specimen from Chihuahua is figured.

3. **Pinotus centralis.**

Pinotus centralis, Harold, Ann. Soc. Ent. Fr. 1869, p. 502 [1].

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Paraiso, El Reposo (*Champion*); Nicaragua, Granada (*Sallé* [1]); Costa Rica (*Van Patten*).

Pinotus sagittarius.

Pinotus sagittarius, Harold, Ann. Soc. Ent. Fr. 1869, p. 502 [1].

Hab. Mexico, Toxpam near Cordova (*Sallé* [1]), Oaxaca (*Höge*).

5. **Pinotus agenor.**

Pinotus agenor, Harold, L'Abeille, vi. p. 141 (1869) [1]; Stett. ent. Zeit. 1880, p. 26.

Pinotus foveicollis, Kirsch, Berl. ent. Zeitschr. xiv. p. 357 (1870) [2]; Harold, Stett. ent. Zeit. 1880, p. 26.

Hab. Panama, Taboga Island (*Champion*).—South America, Colombia [1 2].

One female example only.

6. **Pinotus satanas.**

Pinotus satanas, Harold, Col. Hefte, ii. p. 98 (1867) [1].

Hab. Mexico, Cordova, Toxpam (*Sallé*), Jalapa (*Höge*); Guatemala, Cubilguitz (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica, Volcan de Irazu, Cache, Rio Sucio (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—Colombia [1].

7. **Pinotus carolinus.**

Scarabæus carolinus, Linn. Syst. Nat. ed. xii. i. 2, p. 541 [1].

Hab. North America, Carolina [1].—British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Coban (*Sallé*), near the city 5000 feet (*Salvin, Champion*), San Gerónimo, El Tumbador, Cerro Zunil, Zapote, Capetillo, Mirandilla, Escuintla (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Van Patten*), Volcan de Irazu, Cache (*Rogers*); Panama (*Macleannan*), Volcan de Chiriqui (*Champion*).

Apparently an abundant species throughout the Central-American States, South of Mexico. In Mexico it is replaced by the closely allied *P. colonicus* (Say), which is readily distinguishable (but in the male sex only) by the head having two tubercles, one

before the other, *P. carolinus* having one only. The species varies greatly in size and general form; and in the shape of the cephalic tubercle, which in well-developed male examples is sometimes obtusely pointed and sometimes broad and emarginated at the tip. Extreme forms differ considerably from North-American specimens of *P. carolinus*; but many male examples, especially from Guatemala, offer no difference worthy of note from others of the middle Atlantic States of North America.

P. eremita, Harold, from Colombia is a closely allied form; but I do not venture to refer the Central-American series to it, as two male examples from Colombia, which I have been able to examine, offer a modification in the shape of the cephalic tubercle which does not occur in any of the Central-American specimens.

8. **Pinotus colonicus.** (Tab. III. figg. 7, ♂; 8, ♀.)

Copris colonica, Say, Boston Journ. Nat. Hist. i. p. 174 (♀) (1835)[1]; Complete Writings, ii. p. 649.

Pinotus bituberculatus, Harold, L'Abeille, vi. p. 127 (♂) (1869); Ann. Soc. Ent. Fr. 1869, p. 500[2].

Hab. Mexico[1], Alamos (*Buchan-Hepburn*), Guajuco in Nuevo Leon (*Dr. Palmer*), Presidio (*Forrer*), Izucar, Mazatlan, Tuxtla, Cordova[2], Vera Cruz[2] (*Sallé*), Jalapa, Aguas Calientes, Zapotlan in Colima, Tecomevaca, Tapachula in Chiapas (*Höge*).

The two tubercles of the head (♂), which constitute almost the sole differential character of this species, seem to be the result of inferior development, owing to unknown local causes. It is a prevailing rule in the horned Copridæ (as in other analogous groups) that the smaller and feebler males lose the strongly developed armature of the larger males and resemble the females. This is exemplified in the present case by the hinder tubercle of the male, which is the homologue of the same prominence in the female, and which disappears in the male of *P. carolinus*; whilst the anterior tubercle, which is extremely small in feeble males of *P. colonicus*, becomes larger and more elevated according to the degree of development of the larger males. In *P. carolinus* the hind tubercle (a female character) disappears in the males altogether.

COPRIS.

Copris, Geoffroy, Hist. des Ins. Envir. Paris, i. p. 87 (1762); Erichson, Naturgeschichte der Ins. Deutschl. i. 3, pp. 761, 786.

This well-known genus, distributed over all the tropical and warmer temperate regions of the Eastern Hemisphere, with the exception of Australasia and the Oceanic Islands, is well represented in our Fauna and in temperate North America. It is, however, absent from South America, with the exception of one species strayed from Central America and the West Indies. About eighty species have been described.

1. **Copris læviceps.** (Tab. III. figg. 11 ; 11 *a*, side view of head and thorax.)
Copris læviceps, Harold, Ann. Soc. Ent. Fr. 1869, p. 496 [1].

Hab. Mexico, San Andres Tuxtla in Vera Cruz (*Boucard* [1]), Cordova, Puebla, Playa Vicente (*Sallé*), Jalapa (*Höge*); Guatemala, Pantaleon, Mirandilla, Cubilguitz, Panzos, Teleman (*Champion*).

A specimen from Jalapa is figured.

2. **Copris sallæi.** (Tab. III. figg. 12, ♂ ; 12 *a*, side view of head and thorax.)
Copris sallei, Harold, Ann. Soc. Ent. Fr. 1869, p. 496 [1].

Hab. Mexico, Cordova (*Sallé* [1]); Guatemala, San Isidro (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

A fully-developed male from Cordova is figured.

3. **Copris rebouchei.** (Tab. III. figg. 13, ♂ ; 13 *a*, side view of head and thorax.)
Copris rebouchei, Harold, Ann. Soc. Ent. Fr. 1869, p. 497 [1].

Hab. Mexico, Ventanas (*Forrer*), Puebla (*Boucard* [1]).

4. **Copris klugi.**
Copris klugi, Harold, Ann. Soc. Ent. Fr. 1869, p. 498 [1].

Hab. Mexico, Oaxaca (*Boucard* [1]), Capulalpam, Peras, Duraznal (*Sallé*); Guatemala, San Gerónimo (*Champion*).

5. **Copris boucardi.**
Copris boucardi, Harold, Ann. Soc. Ent. Fr. 1869, p. 497 [1].

Hab. Mexico, Juquila (*Boucard* [1]).

6. **Copris armatus.** (Tab. III. figg. 14, ♂ ; 14 *a*, side view of head and thorax.)
Copris armatus, Harold, Ann. Soc. Ent. Fr. 1869, p. 498 [1].

Hab. Mexico, Toluca (*Boucard* [1]); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), San Joaquin in Vera Paz, Capetillo, Escuintla (*Champion*); Costa Rica (*Van Patten*), Volcan de Irazu, Rio Sucio (*Rogers*).

Appears to be chiefly a southern species in our Fauna. I have seen no Mexican examples except those labelled "Toluca," presumably from M. Boucard, in the Sallé collection.

A fully-developed male from Costa Rica is figured.

7. **Copris prociduus.**
Copris procidua, Say, Boston Journ. Nat. Hist. i. p. 176 [1]; Complete Writings, ii. p. 650.
Copris prociduus, Harold, Ann. Soc. Ent. Fr. 1869, p. 495 [2].

Hab. Mexico [1], Cordova, Vera Cruz [2], Orizaba, Panistlahuaca, Tuxtla, Tehuantepec (*Sallé*), Jalapa (*Höge*), Mochitlan in Guerrero (*Baron*).

8. **Copris incertus.** (Tab. III. figg. 15, ♂; 15 *a*, side view of head and thorax.)

? *Copris incerta,* Say, Boston Journ. Nat. Hist. i. p. 175 [1]; Complete Writings, ii. p. 649.

Copris incertus, Harold, Ann. Soc. Ent. Fr. 1869, p. 494 [2].

Hab. Mexico [1], Campeche in Yucatan (*Sallé*, *Pilate* [2]), Vera Cruz [2], Tuspan [2], Cordova [2], Panistlahuaca, Cosamaloapam, Tehuantepec (*Sallé*), Ciudad in Durango, Cholula, Chilpancingo, Yautepec, Cordova, Guanajuato, Jalapa, Tapachula in Chiapas (*Höge*); British Honduras, R. Sarstoon, R. Hondo (*Blancaneaux*); Guatemala (*Sallé*), Cubilguitz, San Gerónimo, Aceituno, Tocoy, Teleman, Paraiso, El Reposo, Capetillo (*Champion*), Chinautla 4100 feet (*Salvin*); Nicaragua (*Wagner* [2]), Chinandega (*Sallé*), Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui, David, Tolé (*Champion*), Colon (*Janson*).—South America, Ecuador.

Distinguishable from *C. prociduus* only in the male sex by the small spine-like horn behind the base of the long frontal horn being erect (slightly curved in feebly developed individuals), the same being inclined nearly horizontally in *C. prociduus*. The other differential characters mentioned by Von Harold prove variable on the examination of a long series, and as there are intermediate examples in Mexican localities, the two species, or forms, would not merit separation if it were not for the difference in their geographical distribution.

A fully-developed male from Nicaragua is figured.

PHANÆUS.

Phanæus, MacLeay, Horæ Ent. i. p. 124 (1819); Lacordaire, Gen. Col. iii. p. 100.

About eighty species have been described of this fine genus of Copridæ, one of the characteristic forms of the American Fauna. As usual, the tropical zone yields the greatest number and variety of species; but the genus is well represented in the warmer temperate regions both north and south, and shows no falling off there as compared with tropical congeners in richness of colouring. Central America contains a large proportion of species, mostly belonging to one group, and offering less variety of forms than tropical South America.

1. **Phanæus corythus.** (Tab. III. figg. 16, ♂; 16 *a*, side view of head and thorax; 17, ♀.)

Phanæus corythus, Harold, Ann. Soc. Ent. Fr. 1863, p. 163 [1].

Hab. Mexico, Cordova [1], Oaxaca [1], Playa Vicente (*Sallé*), Jalapa, Misantla, Lagos (*Höge*); British Honduras (*Blancaneaux*); Guatemala (*Sallé*), El Reposo (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui (*Champion*).

Very closely allied to *P. telamon*, Erichs., of Eastern Peru and the Upper Amazons; in both sexes the outline of the toothed clypeus and the sculpture of the elytra are

the same. Between the respective females I can discover no difference, but the males are differentiated as follows :—

P. corythus. Cornu capitis lamina basali supra angustata, apice utrinque dentato-producta ; thoracis tuberculis antice porrectis.

P. telamon. Cornu capitis lamina basali quadrata, supra haud angustata, apice fere recte truncata ; thoracis tuberculis lateraliter porrectis.

Males of minor development appear to be rare in this species: I have seen only two. As usual in the Copridæ, this form is scarcely recognizable on account of the degradation in the armature of its head and thorax :—

P. corythus, ♂ minor. Cornu capitis obsoleto, carinam supra tridenticulatam efficiente ; thorax antice vix retusus, tuberculis obtusis, transversis, prope apicem sitis.

We figure a male from British Honduras and a female from the Volcan de Chiriqui.

2. **Phanæus pluto.** (Tab. III. figg. 18, ♂ ; 18 *a*, side view of head and thorax.)

Phanæus pluto, Harold, Ann. Soc. Ent. Fr. 1863, p. 164 [1].

Hab. Mexico [1], Puebla, Oaxaca (*Sallé*).

A distinct species. The male has, instead of a frontal horn, a tri-tuberculate carina like that of the female, and the thoracic prominence is broad and projecting and quadri-tuberculate on its front edge. The armature of the thorax in the female is the same as in *P. corythus*, from which it is distinguished by the sides of the clypeus being rounded towards the median tooth.

3. **Phanæus bitias.** (Tab. III. figg. 19, ♂ ; 19 *a*, side view of head and thorax.)

Phanæus bitias, Harold, Ann. Soc. Ent. Fr. 1863, p. 163 [1].

Hab. Mexico, Tuxtepec (*Sallé* [1]).

The type-specimen in the Sallé collection appears to me to belong to the South-Brazilian species *P. dardanus*, MacLeay (=*jasius*, Fabr., nec Olivier). I have seen no other example from Mexico or Central America.

4. **Phanæus chryseicollis.** (Tab. IV. figg. 2, ♂ ; 2 *a*, side view of head and thorax.)

Phanæus chryseicollis, Harold, Ann. Soc. Ent. Fr. 1863, p. 164 [1].

Hab. Mexico, Cordova (*Sallé* [1]) ; Nicaragua, Chontales (*Belt*, *Janson*) ; Panama, Caldera in Chiriqui (*Champion*).

A well-developed male from Chontales is figured.

5. **Phanæus noctis.** (Tab. III. figg. 20, ♂ ; 20 *a*, side view of head and thorax.)

P. chryseicolli proxime affinis ; differt supra toto fuligineo-niger, opacus, thorax interdum marginibus prope angulos angustissime cupreis ; corpore subtus, pedes et pygidium nigro-cærulea ; thorace opaco, sparsim vix perspicue punctulato, medio basi bipunctato, angulis anticis breviter lobatis ; elytris subtiliter striatis, interstitiis planis, lævibus ; pygidio parce subtiliter punctulato.

♂ major. Cornu capitis elongato-curvatum, postice versus apicem serrulatum, apice acuto; thorace disco medio late concavo, concavitatis margine antico bidentato, margine postico cornubus brevibus duobus approximatis, compresso-conicis, interspatio concavo.

♂ minor. Cornu capitis brevissimum. Thorax disco anteriore concavo, cornubus posticis brevissimis; paullo grossius punctatus.

♂ effœminatus. In loco cornu capitis tuberculo transverso medio obtuse acuminato; thorax prope marginem anticum quinque-tuberculatus.

♀ incognita.

Long. 17–22 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—SOUTH AMERICA, Colombia (*Wallis, coll. Bates*).

Mr. Champion obtained three examples, all males of low stage of development; two of them have a slight trace of metallic edging near the anterior and posterior angles of the thorax and at the base of the pygidium. The single well-developed male from Colombia (Cauca valley?) is more distinctly margined with green or fiery-copper in the same situations; it has also an almost impunctate thorax, the lower developments showing a coarser punctuation on the sides.

Compared with males of *P. chryseicollis* and *P. auricollis*, the male, major, shows an important difference in the posterior horns of the thorax, these being very much closer together than in either of those species.

We figure a male, minor, from Bugaba.

6. **Phanæus velutinus.** (Tab. III. figg. 21, ♂; 21 *a*, side view of head and thorax.)

Phanæus velutinus, Murray, Proc. R. Physical Society of Edinburgh, i. p. 213 (1856)[1]; Edinb. New Philos. Journ. ser. 2, v. p. 225[2].

Hab. COSTA RICA, Volcan de Irazu 6000 to 7000 feet (*Rogers*); PANAMA, Volcan de Chiriqui 4000 feet (*Champion, Trötsch*).—SOUTH AMERICA, neighbourhood of Quito, Ecuador[1 2].

Murray described this beautiful and interesting species from a single example, a male of small size and low development, in which the frontal horn was of moderate height, and the armature of the disc of the thorax reduced to two laterally compressed tubercles. The highly developed male has a very different appearance, the thoracic elevation being, as usual in such cases, removed to the hind part of the disc, and the tubercles in the middle of the front edge of the elevation developed into excessively long, cylindrical but pointed, spines reaching the tip of the clypeus. In a lower grade of males the thoracic spines reach only the front edge of the thorax, the grade described by Murray being still lower than this.

In the female the head has a tri-tuberculate carina, and the thorax near the middle of the anterior margin a very flexuous and fine carina, the middle of which advances forward in an acute angle ending in a tubercle. This carina forms the front edge of an eminence, bordered on each side by a deepish cavity and concave above.

P. velutinus is closely allied to *P. chryseicollis* and *P. noctis*. The whole upper surface is black, with a silky lustre, except the lateral margin of the thorax (from the eye to the basal side of the hind angle), which is of a brilliant fiery-coppery hue, with golden-green reflections. The pygidium and the four hind femora are of the same metallic hues.

We figure a fully-developed male from the Volcan de Chiriqui.

7. **Phanæus endymion.**

Phanæus endymion, Harold, Ann. Soc. Ent. Fr. 1863, p. 163 [1].

Hab. Mexico, Vera Cruz, Cordova [1], Istapan (*Sallé*), Jalapa, Oaxaca, Maltrato (*Höge*); Guatemala, San Isidro, Pantaleon, Cubilguitz (*Champion*).

Von Harold describes the male as "niger opacus," and the female as "cæruleo-viridis nitida." All the male examples I have seen are either rich dark blue, or dark brassy-green; in both cases with blackish elytra. The striæ of the elytra vary in being either smooth or crenate-punctulate. The numerous females are shining dark blue, with the thorax sometimes slightly greenish, with a black antero-discal spot.

♂ major. Cornu capitis longissimum, curvatum. Thorax disco late triangularis deplanatus, subtiliter granulatus, angulis posticis lateraliter valde productis.

♂ effœminatus. In loco cornu capitis carina parum elevata. Thorax disco anguste triangularis, angulis haud productis.

♀. Thorax antice carina tri-tuberculata arcuata et pone carinam concavus.

8. **Phanæus pyrois.** (Tab. III. figg. 22, ♂; 22 *a*, side view of head and thorax; 23, ♀.)

P. endymion proxime affinis et similis, sed differt coloribus et in ♀ thorace antice tri-tuberculato nec carinato, pone tuberculo haud concavus; clypeo bidentato; thorace disco late triangulari, deplanato, subtiliter granulato; elytris sat profunde striatis, striis semper lævibus; corpore subtus pedibusque nigro-cyaneis; pygidio plus minusve cupreo. Colore supra variat, ♂ ♀ (elytra semper nigra fere opaca):—1, thorace nigro subopaco, lateribus anguste aurato-cupreis capiteque nigro; 2, capite (margine antico nigro excepto) rubro-cupreo, thorace rubro-cupreo, lateribus viridi-æneis; 3, capite postice igneo-cupreo, thorace disco nigro subopaco, linea dorsali, margine postico et lateribus anterioribus late læte igneo-cupreis; 4, capite (margine clypeo nigro) et thorace splendide aurato-cupreis.

Long. 14–20 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).—South America, Colombia (*coll. Bates*).

The male shows fine gradations of development in the length of the horn and in the width of the plane and sloping triangular dorsal plate of the thorax, and the lowest or effeminate stage is precisely as described under *P. endymion*. In the female the singular difference in the prominence on the anterior disc of the thorax is constant, and no doubt specific, the three tubercles rising singly out of the convex slope of the surface, without trace of carina or depression behind them.

All the specimens from Costa Rica are of the less metallic var. 1; in the State of Panama the same variety occurs, mingled with vars. 2 & 4. The most richly-coloured examples are from Chontales, where var. 1 appears not to occur.

We figure a pair from Chontales.

9. **Phanæus melampus.** (Tab. IV. figg. 1, ♂; 1 *a*, side view of head and thorax.)

Phanæus melampus, Harold, Ann. Soc. Ent. Fr. 1863, p. 165 [1].

Hab. Mexico [1], Cordova, Tuxtla, Oaxaca (*Sallé*), Jalapa (*Höge*); Guatemala (*Sallé*).

♂ effœminatus. In loco cornu capitis carina triangulariter elevata. Thorax disco antice vix planato, medio utrinque tuberculo lævi.

We figure a fully-developed male from Cordova.

10. **Phanæus guatemalensis.**

Phanæus guatemalensis, Harold, Col. Hefte, viii. p. 114 [1].

Hab. Guatemala [1] (*Sallé*), El Tumbador, Cerro Zunil, Volcan de Agua (*Champion*).

♂ minor fere effœminatus. Cornu capitis brevissimum, acute compresso-conicum. Thorax disco anteriore concavo-deplanato, posterius tuberculis lævibus tribus, mediano minuto.

11. **Phanæus amethystinus.** (Tab. IV. figg. 3, ♂; 3 *a*, side view of head and thorax.)

Phanæus amethystinus, Harold, Ann. Soc. Ent. Fr. 1863, p. 169 [1].

Hab. Mexico, Orizaba (*Sallé* [1]), Zacualtipan in Hidalgo, Misantla, Jalapa, Las Vigas (*Höge*); Guatemala, Panima and Purula in Vera Paz (*Champion*).

♂ minor fere effœminatus. Cornu capitis brevissimum, acute compresso-conicum. Thorax disco anteriore concavo-deplanato, posterius utrinque tuberculo elongato vel carina brevi lævi.

A fully-developed male from Orizaba is figured.

12. **Phanæus damocles.** (Tab. IV. figg. 4, ♂; 4 *a*, side view of head and thorax.)

Phanæus damocles, Harold, Ann. Soc. Ent. Fr. 1863, p. 165 [1].

Hab. Mexico [1], Oaxaca, Capulalpam (*Boucard* [1]), Duraznal, Panistlahuaca (*Sallé*), Juquila, Oaxaca (*Höge*), Mochitlan in Guerrero (*Baron*).

The fully-developed male example figured is from Capulalpam.

13. **Phanæus quadridens.** (Tab. IV. figg. 5, ♂; 5 *a*, side view of head and thorax; 6, ♀, var.)

Copris quadridens, Say, Boston Journ. Nat. Hist. i. p. 176 (1835) [1]; Complete Writings, ii. p. 650.
Phanæus violaceus, Casteln. Hist. Nat. Ins. Col. ii. p. 81 (1840) [2].

Hab. Mexico [1 2], Santa Clara in Chihuahua, Villa Lerdo, Durango city, Pachuca in Hidalgo, Aguas Calientes, Las Vigas, Maltrato, Juquila, Jalapa (*Höge*), Hacienda de

San Miguelito (*Dr. Palmer*), Northern Sonora (*Morrison*), Milpas, Ciudad in Durango (*Forrer*), Puebla, Guanajuato, Izucar (*Sallé*), Mexico city (*Flohr*).

We figure a fully-developed typical male, and also a female of a variety from Chihuahua, the latter being a local form peculiar to Northern Mexico.

14. **Phanæus scutifer.** (Tab. IV. figg. 7, ♂; 7 *a*, side view of head and thorax.)

♂ major. Læte viridi-æneus, politus; clypeo margine, cornu, pedibus anticis, tibiis tarsisque posticis medioque ventris, nigris; cornu capitis sicut in *P. melampo* et affinibus, maxime elongato et curvato sed basi perparum nec angulatim dilatato; thorace lateribus crebre minute granulatis, disco late triangulari deplanato, grosse haud dense vermiculato-granulato, medio basi læviore sed ibi haud distincte planato, nec bipunctato, angulis posticis acute reflexis; elytris striis griseo-opacis sat impressis, obsolete punctulatis, interstitiis parum convexis, hic illic transversim rugatis; pygidio punctulato.

♀ ignota.

Long. 23 millim.

Hab. Mexico, Misantla (*Höge*).

Comes nearest to *P. amethystinus*, from which it differs in the frontal horn being less dilated at the base, and in the base of the thorax having no distinctly limited polished plate.

There were two examples in Herr Höge's collection, one labelled "Misantla" and the other "Oaxaca." As a large part of his collection was labelled wrongly "Oaxaca," and the Misantla specimen bears a special numbered ticket, I think it safe to conclude that the latter is the correct locality of the species.

15. **Phanæus hermes.** (Tab. IV. figg. 8, ♂; 8 *a*, side view of head and thorax.)

Phanæus hermes, Harold, Col. Hefte, iv. p. 82 (1868) [1].

Phanæus chalcomelas, (Perty) var., Harold, Berl. ent. Zeitschr. 1859, p. 198 [2].

Hab. Panama, Bugaba, David, Tolé (*Champion*), Panama city (*J. J. Walker*).—Colombia [1], Bogota [2]. Found abundantly in dung, on open savannas (*Champion*).

The great majority of the specimens are, as described by Von Harold, "subopacus, olivaceo-cupreus;" but a few present a brassy-green, and others a somewhat shining golden-coppery thorax; and others, again, are wholly golden-coppery, slightly shining. The females have often a dull black thorax, with a dorsal line and margins coppery, or the thorax is coppery, irregularly clouded with black.

The male developments are finely graduated and easily recognizable except the lowest:—

♂ effœminatus. Parvus (13 millim.). In loco cornu capitis carina arcuatim elevata. Thorax fere æqualiter convexus, disco antico parum deplanato et interdum carina utrinque obtusissima marginato.

An example from David is figured.

16. **Phanæus adonis.** (Tab. IV. figg. 9, ♂; 9 *a*, side view of head and thorax.)

Phanæus adonis, Harold, Ann. Soc. Ent. Fr. 1863, p. 169 [1].

Hab. Mexico, Tuspan [1], Guanajuato (*Sallé*), Huanchinango (*Truqui*).

A fully-developed male example from Huanchinango is figured.

17. **Phanæus daphnis.** (Tab. IV. figg. 10, ♂; 10 *a*, side view of head and thorax.)

Phanæus daphnis, Harold, Ann. Soc. Ent. Fr. 1863, p. 166 [1].

Von Harold described the fully-developed male only.

♂ minor. Cornu capitis breve. Thorax disco anteriore anguste concavo et sparsim scabroso utrinque medio tuberculo brevi oblique elongato.

♂ effœminatus. Cornu capitis brevissimum. Thorax prope marginem anteriorem concavus, parce granulatus, ante medium utrinque tuberculo subrotundato, plus quam dimidio posteriore convexo lævigato.

♀. Vertex carina recta tri-tuberculata. Thorax antice medio carina arcuata et pone carinam leviter concavus.

Hab. Mexico [1], Cuernavaca, Izucar (*Sallé*, *Höge*), Oaxaca (*Sallé*), Jalapa, Plan del Rio (*Höge*).

Var. *cæruleus*. Spina mediana thoracis baseos apice truncata; elytris fere lævibus. (Harold, *l. c.* pp. 166–167.)
Var. *herbeus* (Sturm). Sicut in typo viridi-æneus; differt solum elytrorum interstitiis convexis.

A fully-developed male from Izucar is figured.

18. **Phanæus tridens.** (Tab. IV. figg. 11, ♂; 11 *a*, side view of head and thorax.)

Phanæus tridens, Casteln. Hist. Nat. Ins. Col. ii. p. 81 [1]; Harold, Ann. Soc. Ent. Fr. 1863, p. 167 [2].

Hab. Mexico [1], Vera Cruz [2], Orizaba, Mazatlan (*Sallé*), Ventanas, Plan del Rio, Cuernavaca, Almolonga, Jalapa (*Höge*).

We figure an example from Almolonga.

19. **Phanæus furiosus.** (Tab. IV. figg. 12, ♂; 12 *a*, side view of head and thorax.)

P. tridenti proxime affinis, coloribus minus resplendentibus, viridi-æneus vel saturate cæruleus, raro aurato-cupreus cornuque (♂) thoracis basali latissimo, supra planato, apice lato bidentato; differt autem (♂ ♀) elytrorum striis crenato-punctatis.
Long. 14–20 millim.

Hab. Mexico, Sonora (*coll. Bates*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Guanajuato (*Sallé*), Ventanas (*Forrer*, *Höge*), Lagos in Aguas Calientes, Jalapa (*Höge*), Mexico city (*Dr. Palmer*).

I have adopted the name "*P. furiosus*, Dugès," given to the species in the Sallé collection. We figure a fully-developed male from Ventanas.

20. **Phanæus nimrod.** (Tab. IV. figg. 13, ♂; 13 *a*, side view of head and thorax.)

Phanæus nimrod, Harold, Ann. Soc. Ent. Fr. 1863, p. 167 [1].

Hab. Mexico, Oaxaca [1] (*Sallé, Höge*), Jalapa, Lagos, Cerro de Plumas (*Höge*), Putla (*Boucard*).

Varies greatly in coloration—from very dark blue, through greenish-blue, brassy green, coppery-green to brilliant golden-coppery.

♂ effœminatus. A *P. daphnis* differt semper thorace medio tri-tuberculato.
♀. A *P. daphnis* differt striis latioribus, interstitiis valde convexis thoraceque postice lævi, polito.

A fully-developed male from Oaxaca is figured.

21. **Phanæus palliatus.**

Phanæus palliatus, Sturm, Cat. Col. p. 332, t. 2. ff. 1 & 2 (1843) [1]; Harold, Ann. Soc. Ent. Fr. 1863, p. 167 [2].

Hab. Mexico, Toluca (*Sallé*), Jalapa (*Höge*), Mexico city (*Flohr*), State of Michoacan [1] [2].

This species varies less in colour than its allies. All the numerous examples examined are either rich coppery-red or dark blue. The coarse vermiculate sculpture of the thorax distinguishes the female and the lower grades of the male from the corresponding forms of the neighbouring species.

22. **Phanæus eximius.** (Tab. IV. figg. 14, ♂; 14 *a*, side view of head and thorax.)

P. palliato proxime affinis. Viridi-auratus, viridi-æneus, vel saturate cæruleus, raro cupreo-auratus; elytris late striatis, interstitiis valde convexis utrinque transversim rugulosis vel crenatis.
♂ major. Cornu capitis valde elongatum curvatum basi vix dilatatum. Thorax sicut in *P. palliato*, disco trianlari, angulis posticis valde reflexis, acutis, medio concavo, subgrosse vermiculato-scabroso, dente valido acuto compresso ante medium basin spatioque inter dentem et marginem posticum planato sublævi bipunctato; differt a *P. palliato* margine antico sicut in *P. quadridenti* (Say) bispinoso.
♂ minor. Cornu capitis breve. Thorax disci dimidio anteriore planato sparsim granulato, spinis anterioribus nullis, dente medio-basali minutissimo versus medium discum sito.
♂ effœminatus. In loco cornu capitis carina triangulariter elevata. Thorax convexus, prope marginem anticum leviter concavus et obtuse bituberculatus.
♀. Thorax toto confertissime granulatus, antice carina brevi crassa obtusa et pone carinam leviter concavus.
Long. 14–17 millim.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Capetillo, Escuintla (*Champion*); Nicaragua, Chontales (*Belt, Janson*).

I have adopted the name given tc this species by Dr. Candèze, under which it has been for some years known in many collections.

A fully-developed male from Guatemala is figured.

23. **Phanæus sallæi.** (Tab. IV. figg. 15, ♂; 15 *a*, side view of head and thorax.)

Phanæus sallei, Harold, Ann. Soc. Ent. Fr. 1863, p. 168 [1].

Hab. Mexico, Cordova [1], Tuxtla (*Sallé*), Jalapa (*Höge*); British Honduras (*Blancaneaux*); Guatemala, La Tinta (*Champion*).

The female is distinguishable from the same sex of the allied species by a shallow concavity, and two very faint punctiform marginal impressions, in the middle of the basal margin of the thorax.

We figure a fully-developed male from Cordova.

24. **Phanæus beltianus.** (Tab. IV. figg. 16, ♂; 16 *a*, side view of head and thorax.)

P. sallæi proxime affinis, thoracis sculptura eadem; differt colore virescenti-cupreo paullo fuscescente et minus nitido, capite thoraceque lateribus lætius viridi-auratis; maxime differt elytrorum striis latis opacis, interstitiis convexis angustioribus.

♂ major. Cornu capitis validum, curvato-acuminatum, basi sat abrupta dilatata. Thorax disco haud late planato-declivi, sat sparsim scabroso, medio basi planato lævi.

♀. Thorax medio niger, medio basi punctis duobus oblongis distinctis; antice carina curvata medio tuberculata et pone carinam excavato.

Long. 20–22 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui (*Champion*).

The flattened and smooth basal plate of the thorax is separated from the anterior declivous and scabrous disc by a transverse carina, and the anterior margin of the slope has at each angle a conical tubercle; the reflexed basal angles are rather less distant than in *P. sallæi*; the sides of the thorax are finely granulated.

The single example from Chiriqui differs from all those from Chontales in being coppery-red, similar to the prevailing colour of *P. sallæi*, but duller.

A well-developed male from Chontales is figured.

25. **Phanæus wagneri.** (Tab. IV. figg. 17, ♂; 17 *a*, side view of head and thorax.)

Phanæus wagneri, Harold, Ann. Soc. Ent. Fr. 1863, p. 170 [1].

Hab. Mexico, Chiapas (*Sallé*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Champerico, El Reposo, Paraiso, Escuintla, San Gerónimo, Purula (*Champion*); Nicaragua (*Wagner* [1], *Sallé* [1]), Granada (*Sallé*); Costa Rica (*Van Patten*), Cache (*Rogers*).

The two small and round punctiform impressions of the base of the thorax, which Von Harold indicates as characteristic of this species in both sexes, are in rare examples wanting.

Dark bluish-green individuals occur only in the northern part of the range of the

species, with rare examples coppery. In our very large series from Costa Rica nearly all the examples are rich golden-coppery, rarely with a greenish tinge.

A fully-developed male from Costa Rica is figured.

26. **Phanæus mexicanus.** (Tab. IV. figg. 18, ♂; 18*a*, side view of head and thorax.)

Phanæus mexicanus, Harold, Ann. Soc. Ent. Fr. 1863, p. 171 [1].
Phanæus divisus, Harold, loc. cit. p. 171 [2].

Hab. Mexico, Sonora (*coll. Bates*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Presidio (*Forrer*), Puebla, Orizaba, Tuxtla, Vera Cruz [1], Izucar, Juquila, Oaxaca [2] (*Sallé*), Villa Lerdo in Durango, Tacambaro, Jalapa, Misantla, Oaxaca (*Höge*).

Von Harold separated *P. divisus* on the ground of a slight difference of relative position in the tubercles on the sloping disc of the thorax; the tubercles exist in the complete number of three only in males of the greatest development, and the difference between *P. mexicanus* and *P. divisus* lies in the anterior tubercle being in the former more or less close to the two hinder ones, and in the latter distant from them. On comparing, however, a large number of well-developed males, it is at once seen that all grades in the relative distance of the tubercles are exhibited, and that the division into two species must be quite arbitrary. Besides, individuals thus compared show no difference in other respects when they differ in the position of the tubercles. In males of secondary development the anterior tubercle disappears; in others of still lower grade all three are wanting.

The species varies very greatly in its rich metallic colours. The brightest form, of resplendent golden-coppery hues, is chiefly found in Southern Mexico. A beautiful dark blue variety occurs at Izucar. The female also varies greatly in size, colours, and in the form and degree of prominence of the thoracic carina; it is, however, always distinguishable from the same sex of *P. sallæi* by the carina not being sharply tuberculated in the middle, nor followed by a concavity. From the females of *P. wagneri* and *P. amithaon* it may be generally distinguished by the absence of punctiform impressions; but, as already observed, in some females (as well as males) of *P. wagneri* these small punctiform impressions are wanting. This indication being absent, I see no other means of separating the females of these three closely-allied species.

A fully-developed male from Puebla is figured.

27. **Phanæus scintillans.** (Tab. IV. figg. 19, ♂; 19*a*, side view of head and thorax.)

P. mexicano affinis, sed thorace ♂ sicut in *P. amithaonte*, disco antice declivi plano scabroso, medio prope marginem anteriorem tuberculo acuto et ante tuberculum bituberculato, angulis elevatis (posticis paullo minus quam in *P. amithaonte* approximatis), apice antice porrectis. Lætissime aurato-cupreus, splendidissimus; thorace medio basi impunctato; elytris striis acute insculptis, interstitiis parum convexis lævissimis.

♀?. Læte aurato-cuprea, viridi-relucens; thorace plagis magnis tribus nigris, medio basi interdum punctis minutis duobus.
Long. 20–23 millim.

Hab. MEXICO, Oaxaca (*Sallé, Höge*).

A fully-developed male is figured.

28. **Phanæus pilatei.** (Tab. IV. figg. 20, ♂; 20*a*, side view of head and thorax.)

Phanæus pilatei, Harold, Ann. Soc. Ent. Fr. 1863, p. 170[1].

Hab. MEXICO, Yucatan (*Pilate*[1], *coll. Sallé*).

A well-developed male is figured.

29. **Phanæus amithaon.**

Phanæus amithaon, Harold, Col. Hefte, xiii. p. 88[1].

Hab. MEXICO, Presidio (*Forrer*), Guanajuato[1], Chiapas (*Sallé*), Guadalajara, Villa Lerdo, Lagos in Aguas Calientes (*Höge*).

Von Harold described only the male of this species, which is distinguished from the same sex of *P. mexicanus* and *P. wagneri* by the elevated dentiform hind angles of the thoracic discoidal elevation being much more nearly approximated, and at their summit forming (instead of a simple tooth) a ridge extending towards the middle of the thorax. The female, according to an example so labelled in the Sallé collection, is readily distinguishable by two large and deep punctiform impressions in the middle of the basal margin.

30. **Phanæus damon.** (Tab. IV. figg. 21, ♂; 21*a*, side view of head and thorax.)

Phanæus damon, Casteln. Hist. Nat. Ins. Col. ii. p. 81 (1840)[1]; Harold, Ann. Soc. Ent. Fr. 1863, p. 169[2].

Phanæus pegasus, Sturm, Cat. p. 331, t. 1. figg. 8, 9 (1843)[3].

Hab. MEXICO[1 2 3], Puebla, Izucar, Juquila, Tehuantepec (*Sallé*), Colima city, Jalapa, Huetamo (*Höge*); NICARAGUA, San Lorenzo (*Janson*).

Var. Atro-cæruleus vel chalybeus.

Hab. GUATEMALA, Tocoy (*Champion*); NICARAGUA, Chontales (*Janson*).

We figure a fully-developed typical male from Puebla.

31. **Phanæus mirabilis.** (Tab. IV. figg. 22, ♂; 22*a*, side view of head and thorax.)

P. damon affinissimus et similis, sed conspicue differt; ♂ thoracis cornubus retrorsum inclinatis acuminatis, apice convergentibus, antice usque ad apicem scabrosis. Læte viridi-auratus, splendidissimus, cornu frontali et cornubus thoracis, extus, nigris.
Long. 20 millim.

Hab. Mexico, Mazatlan, Guanajuato (*Sallé*), Colima city (*Höge*).

A female in the Sallé collection from Guanajuato, labelled, like the male, "nov. sp.," differs in nothing from the female of *P. damon*. A fully-developed male from Mazatlan is figured.

ONTHOPHAGUS.

Onthophagus, Latreille, Gen. Crust. et Ins. iii. p. 141 (1807); Lacordaire, Gen. Col. iii. p. 107; Erichson, Naturgesch. Ins. Deutschl. iii. p. 763; Lansberge, Stettin. ent. Zeit. 1883, p. 161.

A genus remarkable for the almost endless diversity and eccentricity displayed in the armature of the males. Nearly six hundred species have been described, and in all, with very few exceptions, the horns, protuberances, and processes exhibit individual variations, the rule governing which is not easily traceable. America, North and South, seems to contain much fewer species than the Old World, the tropical regions of Africa and Asia furnishing the greater number, as well as the largest and most richly decorated forms.

1. Onthophagus curvicornis.

Onthophagus curvicornis, Latr., Humboldt et Bonpland, Obs. Zool. i. p. 220, t. 23. f. 2 [1]; Harold, Stett. ent. Zeit. 1880, p. 29 [2].

Hab. Mexico [2], Cordova (*Sallé*), Mexico city, Zacualtipan, Tampico, Jalapa, Oaxaca (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Cerro Zunil, Capetillo, Zapote, Balheu, San Gerónimo (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Colombia [2], Venezuela [2], Ecuador [1].

All the examples from the Volcan de Chiriqui and Bugaba are of an indigo or slaty-blue colour. Similarly coloured varieties occur also in Mexico, but the Chiriqui form further differs in being rather less shining than the others.

2. Onthophagus incensus.

Onthophagus incensus, Say, Bost. Journ. Nat. Hist. i. p. 173 [1]; Complete Writings, ii. p. 647; Harold, Stett. ent. Zeit. 1880, p. 30 [2].

Hab. Mexico [1], Campeche in Yucatan, Cordova, Orizaba, Cuernavaca, Tuxtla, Playa Vicente, Vera Cruz, Chiapas (*Sallé*), Frontera and San Juan Bautista in Tabasco, Yautepec, Guadalajara, Jalapa, Oaxaca (*Höge*); Guatemala (*Sallé*), El Tumbador, El Reposo, Las Mercedes, Cerro Zunil, Pantaleon, Zapote, Capetillo, Cubilguitz, San Gerónimo (*Champion*); Honduras (*Sallé*); Nicaragua, Granada (*Sallé*), Chontales (*Belt*, *Janson*); Panama, Colon (*Janson*).

According to Von Harold [2] the only difference between *O. curvicornis* and *O. incensus* lies in the form of the anterior protuberance of the thorax in the male, the protuberance

being porrect and conical in the former, and less advanced, rounded, and slightly indented in the latter. It appears to me, however, doubtful if the Central-American form referred to *O. curvicornis* can be really the same species, as, amongst the very numerous well-developed males I have examined from all parts of the region, not a single one is found with the conical protuberance of the South-American type-form described by Latreille; in all the thorax has the same form as in *O. incensus*. But there exists another character by which the males of both the Central and the South-American forms of *O. curvicornis* are distinguishable from *O. incensus*, viz. the absence of a carina connecting the bases of the cephalic horns. In *O. incensus* this carina is always visible, though it is less acute in some examples than in others; but in *O. curvicornis* there is no trace of a carina. *O. curvicornis* is nearly always black or bluish-black, with a brassy-green tinge only on the crown and near the anterior angles of the thorax. *O. incensus*, on the other hand, is nearly always wholly metallic above; generally dark brassy-green, but sometimes dark blue, coppery-brown, or brassy-brown, with a brilliant coppery thorax. In both species the inner apical angle of the male anterior tibiæ is prolonged and more or less reflexed; and the elytra are finely crenulate-striate, with the interstices rather thickly, irregularly, and finely punctured.

3. **Onthophagus nitidior.** (Tab. V. figg. 1, ♂; 1*a*, side view of head and thorax.)

O. curvicorni et *O. incenso* quam maxime affinis, sed differt colore læte viridi. ♂ carina posteriore nulla vel obsoletissima clypeoque apice minus angustato et multo minus reflexo marginatoque; thorace sicut in *O. incenso* elytrisque subtiliter crenato-striatis, interstitiis sat confertim punctulatis et absque setis.
Long. 6½–10 millim.

Hab. Mexico, Juquila (*Sallé*, *Höge*), Yautepec (*Höge*).

Specimens in the Sallé collection bear the name of *O. nitidus* (Sturm, MS.).

4. **Onthophagus marginicollis.** (Tab. V. figg. 2, ♂; 2*a*, side view of head and thorax.)

Onthophagus marginicollis, Harold, Stett. ent. Zeit. 1880, p. 31 [1].

Hab. Guatemala (*Sallé*), San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Volcan de Chiriqui, David, Los Remedios, Tolé (*Champion*).—South America, Colombia [1], Upper Amazons, Peru [1].

The head is similar in form to that of *O. curvicornis* and *O. incensus*, *i. e.* with bi-cornuted vertex; but the clypeus is obtusely rounded, and there is a deep notch at the suture separating it from the rounded genæ; the head in the male is distinctly bi-carinated. The thorax and elytra are usually testaceous-yellow, with the disc of the former and the alternate interstices of the latter dark brassy-green. The dark colour

is, however, sometimes diffused over nearly the entire surface, and is often brown without brassy tinge.

We figure an example from Los Remedios.

5. **Onthophagus acuminatus.** (Tab. V. figg. 3, ♂; 3*a*, side view of head and thorax.)

Onthophagus acuminatus, Harold, Stett. ent. Zeit. 1880, p. 30[1].

Hab. Panama, Bugaba, David, Colon[1] (*Champion*).—South America, Colombia[1].

Similar to *O. incensus*, from which the male is readily distinguished by the carinated forehead and pointed clypeus. It is also a much smaller insect. The female is with difficulty to be distinguished from small and feebly-developed female examples of *O. incensus*; there is, however, generally perceptible a slight difference in the outline of the clypeus—*O. incensus*, ♀, showing a trace of sinuation in the reflexed apical margin, which is quite absent in *O. acuminatus*, ♀.

An example from Bugaba is figured.

6. **Onthophagus nyctopus.**

O. hæmatopo (Harold) affinis, ab *O. incenso* et affinibus differt thorace (♂) lobo mediano-antico angusto, parum producto, compresso; sericeo-opacus, glaber, niger, capite thoraceque æneo-tinctis, hoc crebre haud profunde punctato, linea dorsali late impressa; elytris planatis, crenato-striatis, interstitiis planis, punctulatis; pygidio crebre punctato; tarsis et antennis fulvo-piceis; clypeo rotundato, medio (♂) paullo reflexo, integro.

♂. Vertex bicornutus nec carinatus, carina anteriore medio recta, ad latera angulata. Thorax antice medio utrinque foveatus, lobo mediano angusto, vix producto compresso. Tibiæ antice haud elongatæ, apice intus simplice.

♀. Caput bicarinatum. Thorax medio prope marginem anticum obtusissime lobatus.

Long. 5–6 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The outline of the genæ is continuous with that of the clypeus. In the lower development of the male the horns of the vertex are reduced to conical tubercles, and the anterior prominence of the thorax is similar to that of the female.

7. **Onthophagus crinitus.**

Onthophagus crinitus, Harold, Ann. Soc. Ent. Fr. 1869, p. 510[1].

Hab. Mexico, Toxpam near Cordova (*Sallé*[1]).

The following is doubtless a local variety of this species, the absence of hairs from great part of the surface in the single example being probably due to artificial causes; in other respects it differs from the Mexican type-specimen of the male only in colour:—

Var. **panamensis.** (Tab. V. figg. 4, ♂; 4*a*, side view of head and thorax.)

Supra breviter setosus, nitidus, viridi-subcupreo-æneus, elytris nigro-violaceis; thorace undique sat confertim punctato, linea dorsali impressa; elytris subtilissime crenulato-striatis, interstitiis aspere punctulatis.

♂. Caput subplanum, disperse punctulatum; clypeo elongato, apice late reflexo et sinuato; vertice cornubus duobus semicirculariter curvatis, cupreis, basi haud carina connexis. Thorax dorso antice obtuse lobatus, lobo post apicem constricto. Tibiæ anticæ valde elongatæ, curvatæ; apice intus prolongato vix reflexo, penicillato.

Long. 8½ millim. ♂.

Hab. PANAMA, San Feliz (*Champion*).

8. **Onthophagus rhinolophus.** (Tab. V. figg. 5, ♂; 5 *a*, side view of head and thorax.)

Onthophagus rhinolophus, Harold, Ann. Soc. Ent. Fr. 1869, p. 510[1].

Hab. MEXICO, San Andres Tuxtla (*Boucard*[1], *in coll. Sallé*), Oaxaca (*Höge*); GUATEMALA, San Isidro (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

The single Guatemalan example, a female, differs in its rather more deeply-impressed and more strongly-punctured striæ. In the very finely, scarcely visibly, punctured elytral interstices it agrees with the typical specimens. We figure a male example from Tuxtla.

9. **Onthophagus belorhinus.** (Tab. V. figg. 6, ♂; 6 *a*, side view of head and thorax; 7, ♀; 7 *a*, side view of head and thorax.)

O. rhinolopho proxime affinis, a quo differt colore fusco-æneo nitido, thorace grosse punctato, elytris grosse crenato-punctatis; thorace (♂) antice medio lobato, lobo longitudinaliter sulcato; clypeo (♂) sicut in *O. rhinolopho*, late truncato et medio cornu erecto armato; genis margine explanato-reflexo, recto, juxta clypei suturam valde angulato, vertice bicornuto. ♀ clypeo triangulari sat elongato, apice bidentato, supra punctato-rugoso, antice transversim carinata, vertice breviter bicornuto; thorace antice medio tuberculis duobus compresso-conicis.

♂ major. Cornu clypei basi gracili, apice valde et abrupte dilatato, cornubusque verticis thorace altioribus.

♂ minor. Cornu clypei basi latior apice obtuso nec dilatatus; cornubus verticis sicut in ♂ majore.

♂ effœminatus. Clypeo apice leviter producto, reflexo, apice emarginato; vertice bituberculato thoraceque antice medio haud lobato, bituberculato.

♀ minor. Vertex bituberculatus, thorace tuberculis obsoletis.

Long. 5–7½ millim.

Hab. GUATEMALA, El Reposo, Las Mercedes, San Isidro, Pantaleon, Zapote (*Champion*).

Var.? ♂ minor. Viridi-auratus, elytris cupreis, pedibus rufis.

Hab. NICARAGUA, Chontales (*Janson*).

Many examples of the typical form, one only of the variety.

This and the preceding species belong to a small group* of the genus in which both

* This curious and beautiful little group appears to be peculiar to Tropical America. Other species belonging to it are *O. clypeatus* (Blanch.), Bolivia, *O. rhinophyllus* (Har.), Venezuela and Colombia, and the two following:—

1. **Onthophagus xanthomerus.**

Niger, nitidus, elytris subviolaceis, sericeo-opacis, femoribus flavis; thorace punctulato; elytris subtiliter punctato-striatis, interstitiis planis, alutaceis, punctulatis. ♂ minor (?) clypeo subtriangulari, medio cornu erecto,

sexes have two pointed horns on the vertex; and the front edge of the clypeus in the male bears an erect horn dilated at its apex, and is bidentate in the female. This strange armature attains a high degree of development in the stronger males, the clypeal horn being dilated at its apex in horizontal semilunar form, and the horns of the vertex elongated and curved; but all grades of degradation of this armature, as well as of the anterior tumid process of the thorax, occur in the large series of individuals collected by Mr. Champion, down to a form in which there is nothing except the absence of a frontal carina to distinguish the male from the female. In well-developed females the horns of the vertex are erect, parallel, and reach nearly to the level of the thorax, but in feebler individuals they are reduced to small conical tubercles, as in the effeminate males; in neither sex are the horns connected at their base by a transverse carina. The thorax, in its highest male development, is nearly vertically declivous in front, with a very shallow depression on each side to receive the horn, and the central convexity laterally compressed and divided into two wheals by a longitudinal furrow, the wheals in males of lower development and in females being reduced to the form of tubercles similar to those of all forms of *O. rhinolophus*.

The colour is dark castaneous or pitchy-brown, glossy above, and more or less metallic-coppery or æneous; the legs generally dark pitchy-red, but sometimes lighter rufous. The elytra are much more strongly sculptured than in *O. rhinolophus*, and the interstices are more convex.

We figure a pair of the type-form from San Isidro. Mr. Champion met with this insect in rotten fruits, especially in cacao; all the Guatemalan localities are on the lower parts of the Pacific slope.

10. **Onthophagus præcellens.** (Tab. V. figg. 8, ♂; 8 *a*, side view of head and thorax; 9, ♀; 9 *a*, side view of head and thorax.)

O. rhinolopho similis, sed differt inter alia ♂ cornubus verticis obsoletis; læte cupreus (interdum cupreo-æneus), nitidus, calvus, antennis pedibusque (interdum) piceo-rufis; thorace punctato; elytris conspicue crenulato-striatis, interstitiis subconvexis, disperse punctulatis.

♂. Caput punctulatum, clypeo versus apicem angustato, lateribus flexuosis, apice cornu erecto apice valde dilatato semilunari, genis dilatato-reflexis, margine rectis, vertice tuberculis duobus acutis, haud carinato.

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basi lato, apice obtuso, genis dilatatis, extus rectis, antice angulatis, vertice longe bicornuto; thorace antice declivi utrinque retuso, medio antice breviter compresso-lobato, supra sulcato. ♀ clypeo dentato, fronte transversim carinata, vertice cornubus duobus brevibus; thorace antice medio bituberculato.

Long. 7 millim.

Hab. Amazons, Ega.

2. **Onthophagus canellinus.**

♀. Rufo-castaneus, calvus, nitidus, thoracis limbo exteriore, antennis femoribusque flavo-testaceis; clypeo triangulari bidentato, carina anteriore utrinque abbreviata, alta, cornubus duobus verticis rectis; thorace undique punctato, tuberculis anticis conico-compressis; elytris convexis, crenato-striatis, interstitiis alutaceis sat confertim punctulatis.

Long. 8 millim.

Hab. South America, Canelos in Ecuador.

Thorax dorso antice tuberculis duobus porrectis elongatis compressis, fere bispinoso. Tibiæ anticæ elongatæ, apice intus truncatæ, penicillatæ.

♀. Caput punctato-rugosum; clypeo late triangulari bidentato; fronte carinata, vertice (sicut in ♀ *O. rhinolopho*) cornubus duobus erectis, basi haud carinata. Thorax dorso antice tuberculis duobus minoribus compressis.

Long. 7½–9 millim.

Hab. Costa Rica (*Van Patten*); Panama, Bugaba (*Champion*).

A transition form between the groups *O. rhinolophus* and *O. sharpi*; but more nearly allied to the former, from the species of which it differs only in the horns of the vertex being reduced to very short conical tubercles; and the thoracic tubercles, in compensation, being greatly lengthened, so that they appear, viewed from above, like two spines projecting much beyond the hind margin of the head. It is just possible that a more developed form of the male exists, having posterior cephalic horns, but there is none such in the fine series collected by Van Patten.

We figure a pair from Costa Rica.

11. **Onthophagus sharpi.** (Tab. V. figg. 11, ♂; 11*a*, side view of head and thorax; 12, ♀.)

Onthophagus sharpi, Harold, Col. Hefte, xiv. p. 138 [1].

Hab. Nicaragua, Chontales (*Belt*); Panama [1] (*Boucard*), Bugaba, Caldera in Chiriqui (*Champion*).

Belongs to a subgroup (including the four following species) in which the males have a clypeal horn similar to that of *O. rhinolophus* and its allies, but no trace of horn on the vertex. *O. sharpi* is deep glossy-black, with very scant punctuation. The male presents similar gradations in the development of the horn to those described under *O. belorhinus*.

In the Sallé collection is a female example (from Santecomapan, Mexico) very similar to *O. sharpi* in form and sculpture, but different in its rich metallic coloration, the elytra being violet-black, the head and thorax golden-coppery, and the sternum and femora brilliant æneous. It would not be safe, in the absence of male examples, to describe this as a separate species.

We figure a pair from Bugaba. In rotten fruits and at sap (*Champion*).

12. **Onthophagus rostratus.**

Onthophagus rostratus, Harold, Ann. Soc. Ent. Fr. 1869, p. 511 [1].

Hab. Mexico, Cuernavaca (*Boucard* [1], *in coll. Sallé*).

13. **Onthophagus tapirus.** (Tab. V. figg. 10, ♂; 10*a*, side view of head and thorax.)

Onthophagus tapirus, Sharp, Journ. Linn. Soc., Zool. xiii. p. 130 (♂ ♀) [1].

Hab. Nicaragua, Chontales (*Belt* [1]).

14. **Onthophagus nasicornis.** (Tab. V. figg. 13, ♂; 13 *a*, side view of head and thorax.)

Onthophagus nasicornis (Dej. Cat.), Harold, Ann. Soc. Ent. Fr. 1869, p. 511 [1].

Nigerrimus, politus; thorace sparsim punctulato; elytrorum striis punctato-crenatis, interstitiis parum convexis, sublævibus; pygidio crebre punctato.

♂. Clypeus subtriangularis, medio apice cornu erecto laminiformi apice haud dilatato; vertice haud cornuto. Thorax antice verticalis tri-impressus, dorso anteriore quadrato-gibboso.

♀. Clypeus bidentatus vel apice profunde fissus; carina frontalis brevis, transversa. Thorax convexus.

Hab. Mexico [1], Cordova, Tuxtla (*Sallé*).

The head in the male is narrower than in the preceding species, the genæ not being greatly dilated, and their outline continuous with that of the clypeus up to the base of the horn.

15. **Onthophagus dicranius.** (Tab. V. figg. 14, ♂; 14 *a*, side view of head and thorax.)

Parvus, fusco-niger, subnitidus, cupreo-tinctus, pedibus rufo-piceis; capite thoraceque grosse sat confertim punctatis; elytrorum striis valde crenato-punctatis, interstitiis rugulosis et sparsim punctatis.

♂ major. Clypeus apice cornu erecto laminato furcato armatus, apice obtuse truncatus, margine leviter flexuoso. Thorax dorso anteriore medio bituberculato, tuberculis altis, compresso-conicis.

♂ minor. Cornu clypei abbreviatum, apice obtusum.

♀. Clypeus bidentatus, capite supra plano, carina frontali brevissima, obsoleta.

Long. 5–6 millim.

Hab. Panama, Bugaba (*Champion*).

The two conical tubercles of the thorax in fully developed males are greatly elevated and porrected, forming a bicuspid protuberance which overhangs the hind margin of the head. In the minor males they are scarcely more elevated than the thoracic tubercles of *O. rhinolophus*.

16. **Onthophagus mexicanus.** (Tab. V. figg. 15, ♂; 15 *a*, side view of head and thorax.)

O. latebroso (Fabr.) affinis, sed differt corpore supra fere calvo etc. Subopacus, atro-cæruleus vel violaceus, interdum viridis, raro cupreo-auratus; thorace subtiliter disperse punctulato, medio basi læviore; elytris subtilissime punctulato-striatis, interstitiis planissimis, punctulatis, punctulis brevissime setiferis; antennis nigro-clavatis; clypeo (♂ ♀) medio apice obtuso truncato, sinuato, supra ♂ lævi, ♀ punctato-rugoso.

♂ major. Caput margine utrinque valde flexuoso bilobato, clypeo lato et valde reflexo; carinis transversis duabus, anteriore subtili transversa, posteriore arcuata utrinque in cornu acuto producta. Thorax antice verticalis profunde bi-impressus; dorso medio antice valde prolongato, furcato. Tibiis anticis elongatis, apice intus acute productis.

♂ effœminatus. Capitis margine laterali minus flexuoso, carinis validioribus, posteriore utrinque haud prolongata. Thorax dorso antice parum producto, quadrato-lobato, lobo antice leviter emarginato. Tibiis anticis apice intus acutis.

♀. Fere sicut in ♂ effœminato; differt thoracis lobo anteriore minus producto haud emarginato tibiisque anticis intus apice simplicibus.

Long. 7–10 millim.

Hab. Mexico, Alvarez Mountains (*Dr. Palmer*), Mexico city (*Sallé*, *Flohr*), Parada, Izucar, Guanajuato, Juquila (*Sallé*), Jalapa, Tonila in Colima, Lagos, Zapotlan, Zacualtipan, San Juan del Rio, Chilpancingo, Yautepec, Cerro de Plumas, Oaxaca (*Höge*).

Named *O. mexicanus*, Sturm, MS., in the Sallé collection; and long known as *O. diabolicus* (Deyr. MS.), a name which has been used by Von Harold for a species from Borneo. A male example from Cerro de Plumas is figured.

17. **Onthophagus guatemalensis.** (Tab. V. figg. 16, ♂; 16 *a*, side view of head and thorax.)

O. mexicano affinis et simillimus; differt ♂ clypeo apice semper acuminato. Subopacus, fere calvus, atro-cæruleus antice viridis, vel toto obscure viridis; capite ♂ margine flexuoso, genis minus rotundatis sed clypeo transversim quadrato, antice lato recto, medio triangulariter producto; thorace disperse et subtiliter granulato; elytris subtiliter punctulato-striatis, interstitiis planis, alutaceis et subtilissime granulatis.

♂ major. Caput bicarinatus, carina verticis utrinque acute producta. Thorax antice profunde bi-impressus, lobo mediano horizontaliter porrecto-furcato. Tibiis anticis elongatis, intus apice acute productis.

♀ minor. Caput sicut in ♂ majore, sed clypeo apice obtusius reflexo-acuminato. Thorax lobo antico brevi quadrato.

♀. Clypeus semicircularis, margine æqualiter reflexo; carina posteriore utrinque haud prolongata. Thorax lobo mediano brevi. Tibiæ anticæ intus apice simplice.

Long. 7–9 millim.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Capetillo, San Joaquin (*Champion*).

A fully-developed male from Capetillo is figured.

18. **Onthophagus lecontei.** (Tab. V. figg. 17, ♂; 17 *a*, side view of head and thorax.)

Onthophagus lecontei, Harold, Col. Hefte, viii. p. 115 [1].

Hab. Mexico, North Mexico [1], Alvarez Mountains (*Dr. Palmer*), Toluca, Guanajuato, Puebla (*Sallé*), Mexico city (*Flohr*), Real del Monte, Zacualtipan, Huitzilac, Jalapa, Oaxaca, Cerro de Plumas (*Höge*).

A small dull black hairy species, distinguished in well-developed males from *O. mexicanus* and its allies by the absence of the posterior carina of the head, the anterior (frontal) carina being, in compensation, rather strongly raised. The thoracic lobe is never much elongated or furcate. An example from Jalapa is figured.

19. **Onthophagus iodiellus.**

♀. Parvus; capite thoraceque violaceis, subnitidis, elytris nigris et sericeo-opacis; capite bicarinato, clypeo bidentato, genis rotundato-sublobatis cum clypeo grosse punctatis; thorace grosse discrete punctato, medio antice carina brevi obtusa; elytris conspicue crenato-striatis, interstitiis sparsim punctulatis, planis.

Long. 4 millim.

Hab. Mexico, Parada (*Sallé*), Cerro de Plumas (*Höge*).

Not larger than the smallest individuals of *O. lecontei*, and the female very similar in form to the same sex of that species. It is different in colour; and in the absence of pubescence, except a few hairs on the head and the fore part of the thorax.

20. **Onthophagus championi.** (Tab. V. figg. 18, ♂; 18 *a*, side view of head and thorax; 19, ♀; 19 *a*, side view of head and thorax.)

O. guatemalensi affinis. Niger, antice viridi-æneo tinctus, subnitidus, breviter setosus; thorace conspicue (antice asperate) punctulato, medio basi depresso, sublæve; elytris subtiliter bilineatim-striatis, striis subtilissime transversim punctulatis, interstitiis subconvexis; confuse asperato-punctulatis; corpore subtus viridi-æneo et metasterno antice compresso-conico.

♂. Caput sublæve, clypeo antice reflexo-acuminato, genis mediocriter rotundatis, carina anteriore subtili recta, carina verticis arcuata utrinque acute producta. Thorax dorso antico late producto-lobato, lobo apice recto sat profunde triangulariter emarginato. Tibiæ anticæ elongatæ; apice intus producto subacuto, vix penicillato.

♀. Caput bicarinatum; clypeus semicircularis, marginibus perparum reflexis, supra rugosus. Thorax antice lobo quadrato (angulis distinctis), parum producto.

Long. 6–8½ millim.

Hab. Guatemala, Paraiso, El Reposo, Zapote (*Champion*).

A very distinct and apparently rare species of the *O. mexicanus* group. The female at first sight is liable to be taken for that of the common *O. curvicornis*; but the short erect pubescence and the sculpture of the elytra will serve to distinguish *O. championi* on closer examination. In *O. curvicornis* the striæ are crenated; and the punctures of the interstices are simple and destitute of the hairs and accompanying granules distinctive of the present species.

A fully-developed male from El Reposo and a female from Paraiso are figured.

21. **Onthophagus eulophus.**

O. mexicano affinis; robustior et corpore supra granulato. Niger, sericeo-nitens, sparsim brevissime setosus, thorace elytrisque passim æqualiter granulatis; thorace angulis anticis late rotundatis; elytris punctulato-striatis.

♂. Caput latum et breve, clypeo margine antico late et obtuse reflexo, genis rotundato-dilatatis, carina anteriore subtili arcuata, carina verticis acuta utrinque acute prolongata. Thorax dorso antico late et obtuse bilobato.

Long. 10 millim. ♂.

Hab. Mexico (*coll. Bates*).

In this species the furcate thoracic process in the fully-developed male is broad, and the fork shows no tendency to divergence. In a very remarkable species from Ecuador* this process, as well as the horn of the clypeus, reaches a degree of development far greater than in *O. latebrosus*.

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* **Onthophagus mirabilis.**

Rufo-castaneus, fere calvus, femoribus flavo-testaceis; thorace confertim punctato; elytris confertissime punctato-rugulosis; pygidio reticulato-punctato. ♂. Clypeus breviter triangularis, antice cornu valde elongato, verticali apice fisso, armatus; thorax processo dorsali subhorizontali angusto, valde elongato, supra sulcato, apice divaricato-furcato et intra furcam cornu clypealem recipiente.

Long. 11 millim. ♂.

Hab. Ecuador, Rio Morona.

22. **Onthophagus orphnoides.** (Tab. V. figg. 20; 20 *a*, side view of head and thorax.)

Gen. *Orphno* primo intuitu similis. ♀? piceo-niger, subnitidus, subtus pedibusque piceo-rufis, subtus sat confertim subruguloso-punctatus; clypeo bidentato, dentibus sejunctim a clypei margine elevatis; fronte carinata, vertice bituberculato; thorace dorso anteriore profunde concavo spinaque valida ad medium marginem anticum; elytris sat profunde striatis, striis confertim crenatis.

Long. 7–10 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Three examples, all of the same sex, and, judging from the broad anterior tibiæ, the frontal carina, and sculpture of the clypeus, females. The teeth of the anterior tibiæ are long and robust, the two nearest the apex much nearer to each other than to the others, the apex obliquely truncated. The head is rather short; and the outline of the genæ and clypeus together forms a semicircle, except for the two triangular apical teeth which rise obliquely upwards separately and direct from the margin. The tubercles of the vertex are stout, elevated and transverse, each forming a very short and much elevated carina: these lie much nearer the anterior carina than the usual position of the hind carina of the females in the genus *Onthophagus*. The anterior cavity of the thorax extends from the fore margin to beyond the middle, and narrows posteriorly: it is smooth at the bottom and the ridge that bounds it on each side is compressed and sharp in the middle, showing that the structure is but an exaggerated modification of the antero-dorsal tubercles of both sexes in the *O. rhinolophus* group. We have here, however, an additional armature in a robust horn or spine, rising, slightly curved upwards and backwards, from the middle of the anterior margin of the thorax.

23. **Onthophagus landolti.** (Tab. V. figg. 21, ♂; 21 *a*, side view of head and thorax.)

Onthophagus landolti, Harold, Stett. ent. Zeit. 1880, p. 34[1].

Hab. Mexico, Milpas (*Forrer*), Orizaba, Tuxtla (*Sallé*), San Juan Bautista, Aguas Calientes, Yautepec, Villa Lerdo, Tonila, Oaxaca, Jalapa (*Höge*); Guatemala, near the city, Zapote, Mirandilla, Pantaleon, El Tumbador, San Joaquin, San Gerónimo (*Champion*); Nicaragua (*Sallé*); Costa Rica, Cache (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America, Colombia[1], Venezuela[1].

This species may be considered the type of a distinct group of the genus (including the six following) in which the head in the male is unarmed and smooth on the surface; the armature of the thorax restricted to one or more short lobular prominences near the fore margin; and the anterior tibiæ of the male greatly elongated, with produced inner apex, within which is a long pencil of hairs. *O. landolti* varies much in colour: the elytra are most frequently dark brassy-brown, with pale reddish spots at the shoulders and apex; but the reddish colour is sometimes extended, and an extreme variety occurs near the city of Guatemala in which the elytra are wholly tawny-brown.

This species is labelled in the Sallé collection *O. posticus* (Chevr.), under which MS. name it is probably known in other collections. Dull-coloured examples with unspotted elytra are distinguishable from *O. anthracinus* only by the stronger punctuation of the thorax and more uniform convexity. A male example from the Volcan de Chiriqui is figured.

24. **Onthophagus höpfneri.**

Onthophagus höpfneri, Harold, Ann. Soc. Ent. Fr. 1869, p. 512[1].

Hab. Mexico, Vera Cruz (*Sallé*[1]), Tonila, Iguala, Acapulco, Tapachula in Chiapas (*Höge*); Nicaragua (*Sallé*).

Very closely allied to the preceding, from which it differs in its smaller size, and in the elytra being yellow, with dark markings on the disc of each.

25. **Onthophagus longimanus.** (Tab. V. figg. 22, ♂; 22 *a*, side view of head and thorax.)

Obscure viridi-æneus vel cuprascens, nitidus, calvus, tarsis rufo-piceis; thorace conspicue punctato; elytris crenulato-striatis, interstitiis subtiliter disperse punctulatis.

♂. Caput latum, inerme, subtiliter sparsim punctulatum, clypeo antice late reflexo, genis rotundato-sublobatis. Thorax antice verticalis supra 4-tuberculatus, tuberculis duobus intermediis approximatis et antice productis. Tibiæ anticæ valde elongatæ, subfalcatæ.

♀. Caput crebrius punctatum; clypeo punctato-ruguloso, margine antico haud reflexo, leviter sinuato; genis rotundato-sublobatis.

Long. 6 millim.

Hab. Mexico, Cordova (*Sallé*).

In well-developed males the two middle tubercles of the thorax are produced as a binodular central lobe overhanging the hind part of the head. In lesser developments they are much reduced, and scarcely overhang the front edge of the thorax; the lateral tubercle on each side is distant from, and posterior to, the central pair, and is never distinctly prominent.

26. **Onthophagus chryses.** (Tab. V. figg. 23, ♂; 23 *a*, side view of head and thorax; 24, ♀.)

Læte viridi-æneus, glaber, politus, elytris fulvo-auratis, interdum æneis; thorace disperse punctulato; elytris subtiliter crenato-striatis, interstitiis sparsim punctulatis; tarsis fulvo-piceis.

♂. Caput inerme, disperse punctulatum; clypeo margine antice late reflexo et truncato; genis angulatis. Thorax medio juxta marginem tri-tuberculatus. Tibiæ anticæ valde elongatæ, subfalcatæ.

♂ effœminatus. Caput grossius punctatum; clypeo vix reflexo, emarginato, vertice breviter carinato. Thorax antice sicut in ♀, obsolete tri-tuberculatus.

♀. Clypeus bidentatus vel angulatim emarginatus, haud reflexus, supra rugoso-punctatus. Thorax antice juxta marginem obsolete tri-tuberculatus.

Long. 6½ millim.

Hab. Mexico, Cordova (*Sallé*); Guatemala, Zapote (*Champion*); Panama, Volcan de Chiriqui, Bugaba (*Champion*).

The single Mexican male example has a more coarsely punctured thorax and golden-green elytra, the latter more strongly sculptured. The single male example from Guatemala is intermediate in sculpture between the Mexican and the Chiriqui form; it has the elytra bluish-green, with tawny spots at the shoulders and at the middle of each side. We figure a typical pair from the Volcan de Chiriqui.

27. **Onthophagus anthracinus.**

Onthophagus anthracinus, Harold, Col. Hefte, xi. p. 104[1].

♂ major. Caput supra absque carinis, medio læve, clypeo late reflexo margineque sinuato. Thorax prope marginem anticum lobo mediano obtuse triangulari. Tibiæ anticæ elongatæ, curvatæ, apice longe penicillato.
♂ minor, vel effœminatus. Caput minus læve, carina verticis brevi; clypeo parum reflexo, late bidentato. Thorax lobo anteriore vix producto, lato, depresso. Tibiæ anticæ minus elongatæ.
♀. Clypeus late bidentatus nec reflexus; thorax sicut in ♂ minore, lobo haud producto, lato, depresso.
Long. 4–6 millim.

Hab. Mexico, Orizaba, Puebla, Juquila, Parada, Guanajuato (*Sallé*), Jalapa, Oaxaca (*Höge*); Guatemala[1], Quezaltenango, Mirandilla, Zapote, Capetillo, Dueñas, Aceytuno, San Gerónimo (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

A small, dull black species, coppery in front, opaque, with a slight silky gloss; the thorax unequal on its surface, and its punctures scattered, and more or less distinctly ring-shaped and setiferous. The surface of the elytra is also beset with distinct punctures, from each of which rises a tawny bristle. The genæ are rotundate, sublobate, and together with the clypeus (in the male) sprinkled with large punctures, the clypeus in the female closely punctate-rugose. The head is unarmed in both sexes, and bicarinate in the female.

28. **Onthophagus igualensis.**

O. landolti affinis. Multo minor, viridi-æneus, nitidus, corpore subtus pygidioque nigris, tarsis rufescentibus; dense breviter setosus; thorace grosse discrete punctato, basi distinctius marginato; elytris punctulato-striatis, interstitiis biseriatim setifero-punctatis; pygidio grosse punctato.
♂ major. Caput planum, sublæve; genis sublobato-rotundatis, grosse punctatis; clypeo sat elongato angustato, cum apice elevato, emarginato et sub-bidentato. Thorax antice medio tuberculo conico acuto.
♂ minor. Clypeus parum elongatus, subtiliter transversim rugulosus, vertice breviter carinato. Thorax medio antice vix prominens.
♀. Clypeus brevis, transversim rugoso-punctatus, apice sinuatus, fronte bicarinato. Thorax inermis.
Long. 3–4 millim.

Hab. Mexico, Iguala and Chilpancingo in Guerrero (*Höge*).

Besides its small size and stronger punctuation, this differs from the allied species in the hind margin of the thorax, which, viewed from behind, appears to be distinctly margined. In all the numerous examples (except one from Iguala) there is no trace of pale markings.

29. **Onthophagus gazellinus.** (Tab. V. figg. 25, ♂; 25 *a*, side view of head and thorax.)

O. gazellæ (Fabr.) quoad formam et colores similis; sed differt capite ♂ inermi etc. Subrotundatus, supra glaber, subtus sparsim setosus; fulvo-testaceus, capite thoraceque disco æneo-fuscis, elytris fusco-irroratis, subtus metasterno medio æneo; thorace toto æqualiter punctulato; elytris crenato-striatis, interstitiis planis et sparsim punctulatis; pygidio sat grosse setifero-punctato.

♂. Caput læve, inerme, margine reflexo; clypeo obtuso truncato; genis dilatatis, subrotundatis. Thorax antice verticalis et obtuse quadri-tuberculatus, tuberculis duobus medianis minus elevatis et obtusioribus. Tibiæ anticæ valde elongatæ; apice intus recte et longe acuminato-producto, longe penicillato.

♀. Caput bicarinatum, confertim punctulatum, antice rugulosum; clypeo semiovato, margine reflexo; genis mediocriter rotundatis. Thorace sicut in ♂.

Long. 9–12 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*).

An insect strikingly different in appearance from all other known American forms of the genus, and much resembling *O. gazella*, a common species in Tropical and Subtropical Africa and Asia. Its true affinities, however, are not with *O. gazella*, but with *O. landolti* and *O. chryses*.

30. **Onthophagus rufescens.** (Tab. VI. fig. 1, ♀.)

Oblongus, convexus, rufo-fuscus, plus minusve cupreo-metallicus interdum æneo-piceus, dense breviter setosus et undique confertim punctatus; capite (genis paullulum rotundato-dilatatis) crebre punctulato; thorace convexo, antice ♂ ♀ subverticaliter declivi, grosse punctato, punctis minoribus intermixtis; elytris crenato-striatis, interstitiis plerumque biseriatim setifero-punctatis et subconvexis.

♂. Clypeus antice paullo angustatus margineque reflexo subsinuato; frons inermis. Thorax magnus, cuboidalis, medio antice valide uni-tuberculata.

♂ minor. Vertex breviter carinata. Thoracis tuberculo obtuso.

♀. Clypeus obtuse rotundatus; vertex carinata, fronte carina obsoletissima. Thorax antice inermis.

Long. 5–6½ millim.

Hab. Mexico, Guanajuato (*Dugès, in coll. Sallé*), Guadalajara, Tupataro, Matamoros Izucar (*Höge*).

I have adopted the name given to this species by Dugès in the Sallé collection.

31. **Onthophagus corrosus.** (Tab. VI. figg. 2, ♂; 2 *a*, side view of head and thorax.)

Fuligineo-niger, antice cuprascens, sericeo-opacus, erecte setosus; thorace punctulis annuliformibus confertim impresso quorum nonnullis setam rigidam emittentibus; elytris subtiliter punctulato-striatis, interstitiis planissimis, eleganter alutaceis plerumque biseriatim setifero-punctatis; pygidio annulato-punctato.

♂. Caput breve, margine sexies flexuoso; clypeo reflexo; carina verticis antice valde arcuata, elevata. Thorax antice late quadrato-gibbosus, gibbere margine antico fere recto tuberculoque conico prope angulos anticos. Tibiæ anticæ attenuatæ; apice recto truncato, penicillato.

♀. Caput margine parum flexuoso; clypeo distinctius bidentato, supra ruguloso; carina anteriore recta, carina verticis minus arcuata, antice ab carina frontali sat remota. Thorax antice parum convexus, prope marginem anticum carina obtusa leviter arcuata. Tibiæ anticæ apice oblique truncato.

Long. 5–5½ millim.

Hab. Mexico, Cordova, Orizaba (*Sallé*).

In what appears to be the well-developed male of this singular species the posterior carina of the head is curved anteriorly in horseshoe-shape, and advances (becoming more sharply raised) beyond the usual situation of a frontal carina, traces of which are seen on the sides. The front edge of the clypeus is reflexed, and forms two rounded teeth; between these frontal teeth and the genæ the clypeal margin is strongly flexuous, and the genæ are rounded and sublobate. The large thoracic prominence is nearly straight and somewhat sharp on its front edge; the latter overhangs the anterior margin of the thorax, and is rectangular at either extremity. A male from Cordova is figured.

32. **Onthophagus cyclographus.**

O. corroso quoad colorem et sculpturam simillimus, differt solum capitis thoracisque armatura, thorace utroque sexu antice bicurvatim carinato carinaque tri-tuberculato.

♂ minor vel effœminatus? Caput bicarinatum, carina anteriore subtili, posteriore recta; clypeus grosse punctatus vix rugulosus.

♀. Caput carinis duabus rectis; clypeus punctato-rugosus.

Long. $5\frac{1}{2}$ millim.

Hab. Guatemala, San Joaquin, Balheu (*Champion*).

The carina of the anterior part of the thorax is sharply defined, and describes two curves, the middle projecting forward further than the two extremities, and like them forming a thickened tubercular angle. In dung in pine-woods (*Champion*).

33. **Onthophagus coscineus.**

O. corroso affinis; multo minor, subovatus, fuligineo-niger, pedibus piceo-rufis, opacus, erecte setosus, capite (♂ ♀) et thorace crebre rotundato-punctulatis (nec annulatis); elytris nitide punctulato-striatis, interstitiis paullo convexis, sericeo-alutaceis plerumque uniseriatim setiferis.

♂. Caput planum; clypeus margine apicali abrupte reflexo et sub-bidentato; genis rotundatis; vertice tuberculis duobus transversis. Thorax juxta marginem anticum medio tumidulus.

♀. Caput bicarinatum; clypeo brevi, late et breviter reflexo-bidentato. Thorax juxta marginem anticum medio convexus.

Long. $3\frac{2}{3}$–5 millim.

Hab. Panama (*coll. Bates*), Volcan de Chiriqui (*Champion*).

The punctures of the thorax are not ring-shaped impressions as in the two preceding species, but simple punctures, and, like those of the head, they lie very near together. The apex of the clypeus in the male is reflexed in trapezoidal form, with the upper edge strongly sinuated; in the female the reflexed edge is much less elevated, and forms two broad and rather distant teeth.

34. **Onthophagus cuboidalis.** (Tab. VI. figg. 3, ♂; 3 *a*, side view of head and thorax.)

♂. Crassus, cuboidalis, niger, politus, sparsim setosus; capite lato, subtiliter punctulato, clypeo concavo, margine laterali fere rectangulo, anteriore rotundato, medio obtuse truncato, carina anteriore subtili, vertice carina alta erecte bicornuta; thorace magno, lato conspicue punctato, punctis minoribus intermixtis, linea dorsali lævi, base depresso lævi, dorso anteriore triangulariter truncato, declivitate anteriore verticali; elytris valde

striatis, striis inconspicue punctulatis, interstitiis disperse punctatis; tibiis anticis curvatis, dente 4° (superiore) subobsoleto.

Long. 11 millim. ♂.

Hab. Mexico, Oaxaca (*Höge*).

A single male. This species is allied to *O. hippopotamus*, but differs in the carina of the vertex being much elevated, and armed at each end with a longish upright horn; and also in the form of the thoracic anterior gibbosity, which forms in front an obtuse bicurved carina, with a sharp vertical declivity to the fore margin of the thorax.

35. **Onthophagus hippopotamus.**

Onthophagus hippopotamus, Harold, Ann. Soc. Ent. Fr. 1869, p. 507[1].

Hab. Mexico, San Antonio de Arriba (*Sallé*[1]).

36. **Onthophagus semiopacus.**

Onthophagus semiopacus, Harold, Ann. Soc. Ent. Fr. 1869, p. 509[1].

Hab. Mexico, Juquila (*Sallé*[1]).

37. **Onthophagus chevrolati.** (Tab. VI. figg. 4, ♂; 4 *a*, side view of head and thorax.)

Onthophagus chevrolati, Harold, Ann. Soc. Ent. Fr. 1869, p. 508[1].

Hab. Mexico, San Andres Chalchicomula (*Sallé*[1]), Las Vigas, San Juan del Rio, Zacualtipan, Salazar, Jalapa, Amecameca (*Höge*).

A male from Chalchicomula is figured.

38. **Onthophagus retusus.**

Onthophagus retusus, Harold, Ann. Soc. Ent. Fr. 1869, p. 509[1].

Hab. Mexico, Parada (*Boucard*[1]), Toluca, Yolotepec, Capulalpam (*Sallé*), Oaxaca (*Höge*).

This and the preceding species are acknowledged by Von Harold to be very closely allied. I find on comparing specimens of each bearing labels in the describer's handwriting that the males exhibit the differences he specifies, which are, on *O. retusus*, the less opaque, metallic, and more coarsely punctured thorax, the posterior carina without distinct tubercle in the middle, the convex elytral interstices, &c.; but in a large series these characters are seen to be variable, and it is doubtful if the specific differentiation can be maintained.

39. **Onthophagus totonicapamus.** (Tab. VI. figg. 5, ♂; 5 *a*, side view of head and thorax.)

O. chevrolati affinis et similis, differt thorace (♂) gibbere antico mediano angusto angulato. Fusco-niger,

ænescens, sericeus, supra inæqualis breviter flavo-setosus; capite (♂ ♀) crebre punctato-rugoso, carina posteriore subtili biarcuata; thorace punctis sat magnis umbilicatis et minoribus intermixtis, basi crenato-marginato; elytris nitide punctulato-striatis, interstitiis planis, pauciter et subtiliter punctulatis.

♂. Clypeus latus, margine laterali plus minusve angulato, antice late rotundato reflexo; carina anteriore nulla. Thorax dorso antice triangulariter gibboso, medio angulato (haud obtuse producto).

♂ effœminatus. Clypeus semicircularis. Thorax gibber parum distinctus.

♀. Caput bicarinatum, clypeo sat elongato et angustato. Thorax antice medio convexum utrinque tuberculo nitido.

Long. 5–8 millim.

Hab. MEXICO, Chiapas (*Sallé*); GUATEMALA, Totonicapam 9000 to 10,500 feet (*Champion*).

A large series of examples. The Sallé collection contains a single female specimen from Chiapas with the thorax less strongly punctured.

40. **Onthophagus aureo-fuscus.**

O. totonicapamo affinis; breviter quadrato-ovatus, terreno-fuscus aureo- vel æneo-tinctus, sericeo-opacus, supra inæqualis, breviter setosus; capite punctato-rugoso; thorace sat grosse irregulariter umbilicato-punctato punctis metallicis, basi punctulato-marginato; elytris striatis, striis grosse punctatis, interstitiis granulatis; pygidio opaco, umbilicato-punctato.

♂. Clypeus latus subquadratus, concavus, antice late rotundatus, genis rotundatis; carina posteriore acuta arcuata. Thorax sicut in *O. totonicapamo* ♂, dorso antice triangulariter gibboso, medio angulato subcompresso.

♂ minor. Clypeus late rotundatus, carina posteriore subobsoleta biarcuata. Thorax gibber antico medio obtusiore.

♀. Clypeus elongatus angustatus, apice sinuato; carina anteriore subtili, posteriore (sicut in ♂ ♀ *O. totonicapamo*) biarcuata. Thorax medio antico convexo ibique utrinque tuberculo glabro.

Long. $6\frac{1}{2}$–$7\frac{1}{2}$ millim.

Hab. MEXICO, Parada (*Sallé*).

Very nearly allied to *O. totonicapamus*, but differing in its light brown colour, with pervading metallic tint, inclining to golden, but scarcely shining. The shallow circular punctures of the thorax are larger, and irregularly scattered over the surface, the spaces between the punctures being very uneven; and the elytral interstices are granulated. The well-developed males are further distinguished by the simply arcuated posterior carina of the head.

41. **Onthophagus cyanellus.** (Tab. VI. figg. 6, ♂; 6 *a*, side view of head and thorax.)

O. chevrolati affinis. Atro-cæruleus, brevissime setosus, subopacus; thorace confertim punctulato, punctulis majoribus et minoribus intermixtis, medio basi marginato; elytris subtiliter punctulato-striatis, interstitiis planissimis, subtilissime punctulato-setiferis.

♂ major. Clypeus latissimus et brevissimus, utrinque fere rectangulus, margine antice late arcuato; carina posteriore arcuata, medio interrupta, extus utrinque in spinam brevem producta. Thorax margine ante medium reflexo-angulato angulisque anticis acutis; dorso anteriore valde gibboso, gibbere medio lato obtuso (fere sicut in ♂ *O. retuso* majore).

♂ minor. Clypeus brevis, semicircularis; carina extus acuta sed haud producta. Thorax angulo marginali haud reflexo, gibbere dorsali medio minore et magis rotundato.

♀. Clypeus antice angustatus, apice obtuse truncato. Caput bicarinatum. Thorax medio antice convexo ibique utrinque obtuse tuberculato.

Long. 8–11 millim.

Hab. Mexico, Parada (*Sallé*), Jalapa (*Höge*); Guatemala, San Gerónimo, Cerro Zunil (*Champion*); Costa Rica, Rio Sucio, Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

The colour is a very dark indigo-blue. This species is very distinct from the others of the *O. chevrolati* group by the punctuation, and the peculiar lateral dentiform prolongation of the posterior carina of the head in the well-developed males. I have adopted the name given to the species by Chevrolat in the Sallé collection. A male from the Volcan de Chiriqui is figured.

42. **Onthophagus ——?**

Hab. Mexico, Jalapa (*Höge*).

A single female example of a species apparently allied to *O. landolti*.

43. **Onthophagus ——?**

Hab. Mexico, Ciudad in Durango (*Forrer*).

A single female example of a species apparently allied to, but distinct from, *O. nitidior*.

44. **Onthophagus ——?**

Hab. Mexico, Ciudad in Durango (*Forrer*).

A single specimen very near *O. chevrolati*, but with somewhat different punctuation.

ONITICELLUS.

Oniticellus, Lepeletier de Saint-Fargeau & Serville, Enc. Méth. x. p. 356 (1825); Erichson, Ins. Deutschl. i. 3, p. 781; Lacordaire, Gen. Col. iii. p. 111.

A genus distributed over the tropical and warm temperate zones of the eastern and western continents, but not found in Australia or in oceanic islands. Only two species have hitherto been detected in America, namely—one in the West-Indian Islands, and a second in California. Forty-four species have been described.

The remarkable new species described below, recently discovered by Herr Höge in Mexico, differs from all other known members of the genus in the armature of the thorax; but as very great diversity exists in the genus in this respect as well as in general form and sculpture, and as the Mexican species agrees very closely with *Oniticellus* in all essential points of structure, there is no ground for treating it as a separate genus.

1. **Oniticellus monstrosus.** (Tab. VI. figg. 7, ♂; 7 *a*, side view of head and thorax; 8, ♀; 8 *a*, side view of head and thorax.)

Magnus, latus, depressus, supra passim dense et minute granulatus, brevissime setosus, fere opacus, niger, capite et thorace chalybeo vel viridi-æneo tinctis; capite lato clypeoque late arcuato; thorace elytris latiore, magno quadrato, postice leviter angustato, dorso late depresso vel concavo, canaliculato; elytris subtiliter punctulato-striatis; tibiis posticis apice valde dilatatis.

♂. Frons tuberculo; vertex cornu brevi acuto medio armatus. Thorax dorso late concavo et utrinque longitudinaliter elevato-carinato.

♀. Frons valde transversim carinata; vertex breviter bicornutus. Thorax dorso antico breviter tricornuto.

Long. 18–22 millim.; ♀ lat. thoracis 12 millim.

Hab. Mexico, Guadalajara (*Höge*).

Three examples.

Fam. APHODIIDÆ.

APHODIUS.

Aphodius, Illiger, Kugel. Verz. der Käfer Preuss. p. 15 (1798); Erichson, Ins. Deutschl. iii. 1, p. 792.

About 460 species of this well-known genus are known to science. By far the greater number belong to the Palæarctic and Nearctic provinces, very few being found in the Indian and Malayan regions, and still fewer in Australasia. In both Africa and America the genus is spread over the tropical and south temperate zones of the continents, but fewer and less varied species occur in South America than in corresponding latitudes in Africa.

I. *Scutellum large, elongate-triangular.*

1. **Aphodius dugesi.** (Tab. VI. fig. 9, ♂.)

A. hæmorrhoidali similis, sed valde differt tibiarum posteriorum setis apicalibus inæqualibus capiteque inermi. *A. hamato* (Say) affinis: multo minor, convexus, niger, nitidus; capite lævi, convexo; clypeo explanato, leviter emarginato, lateribus rotundatis, genis obtuse angulatis; thorace sparsim irregulariter grossissime punctato, basi immarginata; scutello lævissimo, vix depresso; elytris relative brevibus, crenato-striatis, interstitiis planis, lævibus, apicem versus vix convexioribus; pedibus rufo-piceis.

♂. Tibiæ anticæ calcare curvato spathulato; tarsi postici articulo primo subtus furcato.

Var. elytris apice vel totis rufo-piceis.

Long. 4½ millim.

Hab. Mexico, Guanajuato (*Dugès, coll. Sallé*), Tupataro (*Höge*).

Belongs to Dr. Horn's Group B (*cf.* Trans. Am. Ent. Soc. 1870, p. 111), which contains six other much larger species inhabiting the United States; all these species exhibit in the male the same singular dilatation of the fore tibial spur and the forked or hooked basal joint of the hind tarsi. The latter structure is apparently produced by a spine-like process arising from the thickened apex of the joint, and directed a little obliquely towards the base.

The species bears the MS. name *A. grossus*, Dugès, in the Sallé collection.

II. *Scutellum small.*

A. *Apical setæ of the hind tibiæ equal in length.*

a. *Base of the thorax margined.*

2. **Aphodius sallæi.** (Tab. VI. fig. 10.)

Aphodius sallei, Harold, Berl. ent. Zeitschr. 1863, p. 336[1].

Hab. Mexico[1], Cordova, Puebla (*Sallé*), Villa Lerdo, Jalapa, Vera Cruz, Oaxaca, Tehuantepec (*Höge*); Guatemala, near the city, Aceituno, Dueñas, Capetillo, Zapote, Coatepeque, Rio Maria Linda, San Joaquin, Balheu, Purula, San Gerónimo, Cubilguitz, Tamahu, La Tinta (*Champion*); Nicaragua, Greytown, Chontales (*Janson*); Costa Rica, Volcan de Irazu (*Rogers*).

We figure an example from Cordova.

3. **Aphodius lansbergei.**

Aphodius lansbergei, Harold, Berl. ent. Zeitschr. 1874, p. 179[1].

Hab. Mexico, Cordova (*Sallé*[1]).

This species and the preceding are allied to *A. granarius*, but have an emarginated clypeus, and the head and elytra castaneous, the latter being streaked with black. In *A. sallæi* the anterior tibiæ are punctured on the upperside, and the elytral striæ sulciform; in *A. lansbergei* the tibiæ are smooth, and the elytral striæ fine; the interstices are flat in both species. *A. sallæi* appears to be an abundant species, whilst *A. lansbergei* is rare.

I have seen only the typical example in the Sallé collection.

4. **Aphodius indutilis.**

Aphodius indutilis, Harold, Berl. ent. Zeitschr. 1874, p. 178[1].

Hab. Mexico[1] (*Sallé*), near the city (*Flohr*, *Höge*), Zacualtipan (*Höge*); Guatemala, Quezaltenango, Quiche Mountains, Capetillo (*Champion*).

This species resembles in form and colour the allied North-American *A. ruricola*, Melsh., from which Von Harold distinguishes it chiefly by the coarsely rugose-punctate head and less prominent genæ.

5. **Aphodius aztecus.** (Tab. VI. fig. 11.)

Aphodius azteca, Harold, Berl. ent. Zeitschr. 1863, p. 381[1]; 1871, p. 252.

Hab. Mexico[1], Jacale (*Sallé*).

6. **Aphodius vittatus.**

Aphodius vittatus, Say, Journ. Acad. Phil. v. p. 191[1]; Complete Writings, ii. p. 295; Harold, Berl. ent. Zeitschr. 1863, p. 355[2]; Horn, Trans. Am. Ent. Soc. 1870, p. 120[3].

Hab. North America [1 2 3].—Mexico, Northern Sonora (*Morrison*), Guanajuato, Cordova (*Sallé*), Chihuahua city, Cuernavaca, Zacualtipan, Vera Cruz (*Höge*).

b. *Base of the thorax not margined.*

7. **Aphodius oleosus.**

Aphodius oleosus, Harold, Berl. ent. Zeitschr. 1871, p. 260 [1].

Hab. Mexico [1].

Described by Von Harold from a specimen supplied by Dr. Haag of Frankfort. The species appears not to have been met with by M. Sallé or any of our travellers.

8. **Aphodius innexus.**

Aphodius innexus, Say, Bost. Journ. Nat. Hist. i. p. 177 (1837) [1]; Complete Writings, ii. p. 651.
Aphodius flavocinctus, Harold, Ann. Soc. Ent. Fr. 1860, p. 614 [2].

Hab. ? North America, California [2].—Mexico [1 2], Alvarez Mountains (*Dr. Palmer*), Guanajuato, Puebla, Oaxaca (*Sallé*), Mexico city (*Flohr*), Aguas Calientes, San Andres Chalchicomula, Tula (*Höge*).

9. **Aphodius cuniculus.**

Aphodius cuniculus, Chevr. Ann. Soc. Ent. Fr. 1864, p. 411 [1]; Harold, Berl. ent. Zeitschr. 1871, p. 271 [2].

Hab. Mexico, Cordova (*Sallé, Höge*), Vera Cruz (*Höge*); Guatemala, Zapote (*Champion*); Nicaragua, Greytown (*Janson*).—Antilles, Cuba [1 2], Santo Domingo [2].

10. **Aphodius lividus.**

Scarabæus lividus, Oliv. Ent. i. 3, p. 86, t. 26. f. 222 [1].
Aphodius lividus, Erichs. Ins. Deutschl. i. 3, p. 837; Muls. Col. de France, Lamellicornes, p. 235; Horn, Trans. Am. Ent. Soc. 1870, p. 121 [2]; Harold, Berl. ent. Zeitschr. 1871, p. 279 [3].

Hab. North America, Southern States [2].—Mexico (*Sallé*), Northern Sonora (*Morrison*), San Pedro in Coahuila (*Dr. Palmer*), Tupataro, Aguas Calientes (*Höge*); Guatemala, Chinautla (*Salvin*); Nicaragua, Chontales (*Janson*).—South America, Brazil; Europe [1]; Asia; Senegal; Australia [3].

11. **Aphodius ——?**

Hab. Mexico, Cordova (*Sallé*).

A single, immature, example of a very small species allied to *A. cuniculus*, but evidently distinct.

B. *Apical setæ of the hind tibiæ unequal in length.*

a. *Base of the thorax margined.*

12. **Aphodius flohri.**

Elongato-oblongus, convexus, niger, politus, capitis margine tarsisque (interdum pedibus totis) piceo-rufis, antennis fulvis; capite semicirculari, clypeo antice emarginato et utrinque distincte angulato, genis haud rotundatis; fronte ♂ grosse rugose, ♀ subtiliter sparsim, punctata, media tumidula, carinulaque utrinque ante oculum; thorace basi subtiliter marginata, angulis posticis valde obtusis ibique nec sinuato, dorso mediocriter dense punctato punctisque minutis intermixtis, linea dorsali lævi; elytris relative elongatis, exarato-striatis, striis punctulatis parum crenulatis, interstitiis planis subtiliter sparsim punctulatis; mesosterno grosse oblongo-punctato, metasterno utrinque linea unica punctorum.

Long. 6–7 millim.

Hab. Mexico, near the city (*Flohr*, *Höge*), Guanajuato, Oaxaca (*Sallé*), Durango city, Refugio (*Höge*).

This species seems to be closely allied to *A. coloradensis*, Horn.

13. **Aphodius ——?**

Hab. Mexico, Northern Sonora (*Morrison*).

A species sent by the late Mr. Morrison as the *A. ursinus*, Motsch., an insect known previously only from Alaska and Kamchatka, and, according to Von Harold and Dr. Horn, belonging to the section having equal apical setæ to the hind tibiæ. Morrison's species certainly agrees very well with the descriptions of both authors, with the exception that the apical setæ are decidedly unequal; hence I hesitate to adopt the name. It is closely allied to *A. flohri*.

14. **Aphodius glyptus.** (Tab. VI. fig. 12.)

A. stupido (Horn) proxime affinis. Niger, subopacus, supra setis brevissimis argenteo-griseis dense obsitus; capite toto subdense subtiliter punctulato; clypeo sinuato et extus subangulatim rotundato, margine ante genas perparum sinuato; fronte media convexa; thorace creberrime hic illic confluenter et æqualiter punctulato, basi utrinque late sinuata angulisque obliquis obtusis; elytris exarato-striatis, striis nitidis, fere lævibus, interstitiis usque ad apicem planis et subtiliter complicato-reticulatis; antennarum clava fusco-nigra.

Long. 5 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*).

15. **Aphodius latecrenatus.** (Tab. VI. fig. 13.)

A. stupido (Horn) affinis. Obscure castaneo-fuscus, subopacus, capitis thoracisque lateribus plus minusve castaneo-rufis, elytris obscure rufo-maculatis; capite toto fere æqualiter discrete punctulato, inermi; clypeo medio convexo, antice subsinuatim truncato, lateribus usque ad genarum apicem leviter sinuatis subrectis; thorace confertissime fere reticulatim punctato, punctulis minutis dorsi intermixtis, lateribus sicut corrosis, angulis posticis valde sinuatis; elytris latissime exarato-striatis striisque grosse et late confertissime punctatis, interstitiis crebre punctatis, incumbente pubescentibus.

Long. $3\frac{1}{2}$–5 millim.

Hab. Guatemala, Totonicapam 9000 to 10,500 feet (*Champion*).

Belongs to the same group as the preceding (Dr. Horn's Group K and Erichson's Group N), from all the known species of which it differs by its deeper and coarser sculpture. It also differs in the lesser inequality of the apical setæ of the hind tibiæ. The setæ are all short and at first sight appear equal, but on close examination of well-preserved specimens a slight but distinct difference of length is evident. The reddish spots on the reddish-brown elytra are ill-defined, but more distinct on some of the interstices at the base; in some examples the elytra appear vaguely tessellated with red.

16. **Aphodius euprosopus.** (Tab. VI. fig. 14.)

A. inquinato (Fabr.) similis. Niger, nitidus, elytris glabris, flavo-testaceis, maculis oblongis discoidalibus et plaga irregulari laterali nigris; capite obsolete trituberculato, subtiliter sparsim punctulato, clypeo leviter sinuato et utrinque rotundato, macula utrinque laterali rufo-testaceo; thorace sparsim æqualiter punctulato, linea dorsali lævi, lateribus (præcipue antice) flavo-testaceis; elytris crenulato-striatis, interstitiis planis, sparsim, lateribus et apice densius, punctulatis, humeris acute dentatis; pedibus subtus (tarsis apice) pallide testaceis, femoribus medio nigris, his conspicue punctatis.

Long. 4–4½ millim.

Hab. Guatemala, Totonicapam, Quiche Mountains (*Champion*).

Belongs to a group numerously represented in the temperate and boreal regions of the Old World and in North America, with which it disagrees only in the apical setæ of the hind tibiæ being short and nearly equal in length; the usual elongated setæ are wanting, though some are a little longer than the others. The base of the thorax is finely margined. In the number and arrangement of the black elytral spots it agrees best with *A. inquinatus*, but the discoidal spots are all detached and oblong-quadrate in shape: there are two on each of the second and fourth interstices and one (posterior) on the sixth, the lateral larger spot forming an irregular vitta anteriorly on the sixth to the eighth.

Our examples were captured at elevations of from 7000 to 10,500 feet.

b. *Base of the thorax not margined.*

* *Genæ not prominent, obtuse.*

17. **Aphodius duplex.** (Tab. VI. fig. 15.)

Quoad formam et colores *A. brasiliensi* (Casteln.) similis, sed multo minor. Mediocriter convexus, glaber, nitidus, luteo-testaceus, capite thoraceque medio castaneis, elytris utrinque prope apicem vittulis duabus obliquis fuscis (vittam luteo-testaceam includente) suturaque fusca; capite inermi, æqualiter discrete punctulato, clypeo antice subsinuatim truncato, genis parum prominentibus; thorace toto punctulato, basi utrinque obliquata, angulis obtusis sed distinctis; elytris crenulato-striatis, interstitiis subplanis, punctulatis; tibiis anticis extus ante dentes serrulatis et supra punctatis, posticis cum tarsis gracilibus; corpore subtus castaneo-fusco, fere lævi, pedibus antennisque luteo-testaceis. Elytrorum striæ 2ª et 3ª apice abbreviatæ ibique 3ª a 4ª valde distante, 4ª et 5ª approximatæ.

Long. 4 millim.

Hab. Mexico, Jacale, Juquila (*Sallé*), Cerro de Plumas, Mexico city, Zacualtipan, Jalapa, Huitzilac, Chilpancingo (*Höge*); Costa Rica, Volcan de Irazu (*Rogers*).

Costa Rican examples are a little darker in colour, and have more distinctly convex elytral interstices than those from Mexico. The species resembles *A. brasiliensis* in form and colour, and especially in the characteristic marking near the apex of the elytra; but it belongs, according to the received classifications of the genus, to quite a different section: *A. brasiliensis* having equal apical setæ to the hind tibiæ and a trituberculate head, the base of the thorax remaining, as in *A. duplex*, immarginate. It must be observed that the inequality of the apical setæ is not the same in *A. duplex* as in the *A. prodromus* group, the long bristles are near the outside of the fringe and not subalternately mingled with the short bristles.

An example from Costa Rica is figured.

18. **Aphodius panamensis.** (Tab. VI. fig. 16.)

Aphodius panamensis, Harold, Berl. ent. Zeitschr. 1859, p. 212[1].

Anguste-oblongus, glaber, politus, piceo-fuscus, capite thoraceque subænescentibus, thoracis lateribus et macula media basali elytrorumque margine et interstitio 2° luteo-testaceis; capite fere lævi, polito, clypeo sinuato et utrinque rotundato, mediocriter convexo, genis angulatis sed parum prominentibus; thorace disco subtilissime sparsim, lateribus grossius et densius, inæqualiter punctulato, angulis posticis omnino rotundatis; elytris striatis, striis haud perspicue punctulatis, interstitiis fere planis, subtilissime alutaceis; pedibus gracilibus, sparsim longe setosis, tibiis posticis extus brevissime carinatis. Elytrorum striæ 1ª–3ª solum apice liberæ, interstitia convexa.

Long. 3½–4 millim.

Hab. Panama[1], Bugaba, David (*Champion*).

When this insect is viewed from above, the base of the thorax appears immarginate; but from behind obliquely the extreme edge is seen, with a lens, to be very finely margined. In profusion in horse-dung on open savannahs in the low country (*Champion*).

19. **Aphodius guatemalensis.** (Tab. VI. fig. 17.)

Parvus, oblongus, mediocriter convexus, glaber, nitidus, piceo-niger, capite utrinque macula, thoracis angulis anticis elytrisque vittis abbreviatis basalibus, macula humerali alterisque prope apicem, fulvo-testaceis, pedibus rufo-piceis; capite inermi, medio parum tumido, toto regulariter subdense punctulato; clypeo antice subsinuatim truncato, lateribus leviter rotundatis, ante genas verticaliter arcuatis; thorace disco sparsim subtiliter, lateribus densius grossius, punctulato, basin versus angulo obliquo, angulis distinctis parum obtusis ibique subtilissime marginato; elytris subtiliter crenulato-striatis, interstitiis planissimis, vix perspicue sparsim punctulatis; antennis rufo-piceis, clava fusca; pedibus posticis gracilibus, tarsis articulo primo elongato. Elytrorum striæ 2ª–5ª æqualiter distantes, 2ª paullo abbreviata, 3ª–5ª æquales; interstitia usque ad apicem plana.

Long. 3–3½ millim.

Hab. Guatemala, Quiche Mountains, Quezaltenango, Dueñas, San Gerónimo, San Joaquin, Balheu (*Champion*). Many examples.

Belongs to a group of very small, closely allied species, which tend to form geographical varieties distinguished by colour and markings. Its chief characters are:—(1) the finely impressed elytral striæ, which are not squarely scored, but are simple lines

finely crossed by small crenulating punctures; (2) the equidistance near the apex of striæ 1–5; (3) the very fine punctuation of the disc of the thorax and of the elytral interstices.

The typical form here described is nearly black above, with a tawny spot on each side of the head and at the apical angles of the thorax, and with tawny vittæ on the elytral interstices two, three, and four from the base, more or less abbreviated posteriorly, a spot of the same colour on the shoulders, and sometimes a spot on the fourth interstice towards the apex. The following are evidently colour races:—

Var. *A. scotinus*. Nigro-piceus, thoracis angulis anticis elytrorumque humeris fulvo-maculatis.

Hab. Mexico, Cordova (*Sallé*), Jalapa, Sayula, Tacambaro, Juquila (*Höge*). Several examples.

Bears the MS. name (now preoccupied for a described species) of *A. anthrax*, Deyr., in the Sallé collection.

Var. *A. chiriquinus*. Fulvescens, thorace disco elytrisque lateribus et apice castaneo-fuscis.

Hab. Panama, Volcan de Chiriqui (*Champion*). Several examples.

An example from Costa Rica (*Rogers*) is exactly intermediate between this form and *A. guatemalensis*, type.

We figure a typical example from the Quiche Mountains.

20. **Aphodius charmionus.** (Tab. VI. fig. 18.)

A. guatemalensi proxime affinis: differt elytris flavo-testaceis, sutura, lateribus plagaque apicali (macula flava apud interstitium 4^{m} includente) nigris; capite thoraceque nigris, nitidis, crebrius æqualiter punctatis, illo macula laterali, hoc macula humerali, rufo-testaceis; elytris subtiliter crenato-striatis, interstitiis paullo convexioribus fortiusque punctulatis; pedibus testaceo-rufis. Elytrorum stria 5^{a} apice multo abbreviata.
Long. 3½ millim.

Hab. Mexico, Jalapa (*Höge*). Many examples.

21. **Aphodius diminutus.**

A. guatemalensi affinis. Glaber, nitidus, piceo-niger, capite thoraceque lateribus fulvo-testaceis, elytris castaneo-rufis basi pallidioribus; capite inermi, vix convexo, toto æqualiter punctulato, clypeo apice obtuse subsinuatim truncato; thorace æqualiter sat sparsim punctulato; elytris subtiliter exarato-striatis, striis minutissime vix crenato-punctatis, interstitiis paullo convexis, punctulatis; corpore subtus pedibusque piceo-testaceis. Elytrorum striæ sicut in *A. guatemalensi*, sed interstitiis paullo convexioribus striisque 4^{a}, 8^{a} et 5^{a}, 6^{a} ante apicem conjunctis.
Long. 2½–3½ millim.

Hab. Guatemala, El Tumbador, Dueñas, San Gerónimo, Chiacam (*Champion*).

22. **Aphodius erythrinus.**

A. diminuto affinis et simillimus, sed certe differt thorace inæqualiter punctato, punctis majoribus et minoribus conspicue intermixtis. Differt autem elytris relative brevioribus, quam caput cum thorace paullo

longioribus. Rufescenti-fulvus, capite medio thoracisque disco castaneo-fuscis; capite striisque elytrorum sicut in *A. diminuto*.
Long. 3 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

23. **Aphodius xanthus.** (Tab. VI. fig. 19.)

Parvus, convexus, glaber, nitidus, fulvo-testaceus, elytris flavo-testaceis, sutura paullo obscuriore; capite inermi, medio leviter convexo, subtiliter sparsim punctulato, clypeo obtuse sinuato-truncato; thorace sicut in *A. guatemalensi*, angulis posticis distinctis sed obtusis basique prope angulum obliquo, recto, supra medio lævi, lateribus subtilissime punctulatis, punctis sparsis grossis intermixtis; elytris subtiliter crenulato-striatis, interstitiis usque ad apicem planis lævibus, striis 1^{a}–5^{m} prope apicem æquidistantibus nec abbreviatis; tarsis posticis gracilibus; oculis supra magnis.
Long. 3 millim.

Hab. Panama, Volcan de Chiriqui, Bugaba (*Champion*).

Many examples. Belongs to the *A. rubeolus* group, of North America.

24. **Aphodius bifrons.** (Tab. VI. fig. 20.)

Oblongus, minus convexus, nitidus, glaber (setis nonnullis prope elytrorum apicem exceptis), margine sparsim longe setosus, flavo-testaceus, vertice thoracisque disco leviter infuscatis; capite plano, parce punctulato, clypeo antice medio concavo, profunde sinuato et valde bidentato, dentibus latis et recurvis, genis nullo modo prominentibus; thorace sparsim et regulariter punctato, angulis posticis rotundatis; elytris subtiliter crenulato-striatis, interstitiis alutaceis parce punctulatis, striis prope apicem minus impressis; tarsis posticis gracilibus; antennis flavo-testaceis; oculis supra magnis.
♂. Tibiæ anticæ intus flexuosæ.
Long. $4\frac{1}{2}$ millim.

Hab. Mexico, San Pedro in Coahuila (*Dr. Palmer*), Villa Lerdo in Durango (*Höge*).

A highly peculiar species, but fitting best this group than any other yet indicated in the genus. The base of the thorax is very finely margined on the extreme edge, but the inner edge of the exceedingly fine groove turns off in a curving plica before reaching the hind angle.

b. *Genæ acutely pointed.*

(Group including the European species *A. rufipes*, *A. depressus*, *A. luridus*, and others.)

25. **Aphodius fuliginosus.** (Tab. VI. fig. 21.)

Aphodius fuliginosus, Harold, Berl. ent. Zeitschr. 1863, p. 327 [1].

Hab. Mexico [1], Guanajuato, Puebla (*Sallé*), Oaxaca (*Sallé*, *Höge*), Refugio in Durango (*Höge*).

Many examples, including the types of Von Harold. A specimen from Oaxaca is figured.

26. **Aphodius högei.**

A. fuliginoso affinis; paullo minor, sat anguste oblongus, niger, nitidus, elytris livido-castaneis, subnitidis; capite fere lævi, genis plus minusve productis, acutis, thorace medio basi lobato subtiliter sparsim (lateribus antice

et postice grossius) punctulato; elytris crenulato-striatis, interstitiis planis, alutaceis, subtilissime sparsim punctulatis; femoribus 4 posterioribus flavo-testaceis.

♂. Tarsi intermedii graciles, unguibus basi intus obtuse dentatis.

♀. Thorax paullo crebrius punctulatus. Ungues omnes simplices.

Long. 6 millim.

Hab. MEXICO, Las Vigas, Mexico city, Huitzilac, Pachuca (*Höge*).

A large number of examples.

Var. *A. durangoensis.* Paullo major. 7 millim.

Hab. MEXICO, Refugio in Durango (*Höge*).

Closely allied to *A. fuliginosus*, but less opaque, the head and thorax being always shining and black, and the elytra having an oily gloss, which, however, is shown in less degree in some examples of *A. fuliginosus*. But a more definite character exists in the structure of the tarsi of the middle pair of legs in the male: in *A. fuliginosus* the tarsi are much shortened, with nodose joints 2–4, and thickened claws toothed at the base; in *A. högei* they are slender, nearly as in the hind pair, the claws remaining toothed within at the base. Durango specimens are glossy and considerably larger in size; in the numerous examples examined I find no other difference.

27. **Aphodius mexicanus.**

Aphodius mexicanus, Harold, Berl. ent. Zeitschr. 1862, p. 382[1]; 1863, p. 330.

Hab. MEXICO, Parada, Oaxaca[1], Puebla, Etla, Juquila (*Sallé*), Mexico city (*Flohr*), Oaxaca (*Höge*); GUATEMALA, Totonicapam (*Champion*).

There are many examples in the Sallé collection, including a type specimen bearing a label in Von Harold's handwriting. According to these the species varies considerably: in size from $4\frac{1}{2}$ to 6 millim.; in colour from black to livid-castaneous; in the depth and strength of the punctured striæ, which are sometimes deeply gouged with bilineated bottoms, and in rare cases quite superficially impressed; in the hind angles of the thorax —sometimes rounded and sometimes nearly rectangular; and in the truncation of the clypeus being, especially in small examples, scarcely perceptible.

28. **Aphodius gravidus.**

Aphodius gravidus, Harold, Berl. ent. Zeitschr. 1863, p. 329[1].

Hab. MEXICO (*ex coll. Deyrolle*[1]).

This species is not contained in our collections.

29. **Aphodius puncticeps.**

Aphodius puncticeps, Harold, Berl. ent. Zeitschr. 1862, p. 383[1]; 1863, p. 330.

Hab. MEXICO, Chalchicomula (*Sallé*[1]).

The type specimen in the Sallé collection is the only one I have seen.

30. Aphodius villosipes.

Aphodius villosipes, Harold, Berl. ent. Zeitschr. 1862, p. 384[1]; 1863, p. 330.

Hab. Mexico[1], Oaxaca (*Sallé*).

31. Aphodius luridiventris.

Aphodius luridiventris, Harold, Berl. ent. Zeitschr. 1862, p. 385[1]; 1863, p. 330.

Hab. Mexico[1], Cinco Señores, Yolos (*Sallé*), Mexico city (*Höge*).

The Sallé collection contains no examples of this or the preceding species labelled by the describer; but there is a series of each named by M. Sallé, all of which seem to me to belong to one and the same species. As none of the differential characters mentioned by Von Harold hold good, I am inclined to think they are not distinct. All the specimens have convex elytral interstices, and a more or less distinct tooth at the inner base of the tarsal claws in all the legs. The punctuation of the upper surface varies indefinitely, and the silky surface is more or less perceptible in all*.

SAPROSITES.

Saprosites, Redtenbacher, Fauna Austriaca, Käfer, 2nd ed. p. 436 (1858).

This genus was founded by its author on a minute Aphodiide found in orchid-houses at Schönbrunn, and supposed to have been imported from America; Von Harold gives the locality as Colombia. Redtenbacher omits to mention the characters distinguishing the genus from *Euparia*, and from the species belonging to the subsequently proposed genus *Atœnius*: these, according to Von Harold (incidentally stated in his diagnoses of various species), are the traces of transverse carinæ on the outer side of the four hind tibiæ and the dentiform projections on their apical margin; but there is little doubt that the numerous species referred to *Saprosites* by Von Harold are really congeneric with Redtenbacher's type. I would, however, exclude such species as *Saprosites sulcatus*, Harold, which have a simple fringe of bristles to the apical margin of the four hinder tibiæ.

Upwards of twenty species of *Saprosites* have been recorded. The genus has a wide range, including, according to Von Harold, besides Tropical America and Tropical Asia, Japan, New Zealand, and some of the tropical islands of the Pacific. The flattened species which I observed in the Amazons region were found under the close-fitting bark of trees, in company with similarly flattened Cossonidæ and Cucujidæ †.

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* The name *Aphodius duplex* given above (p. 87) has been previously applied by Leconte to a North-American species of this genus; I now propose to change the specific name to *opisthius*.

† In further elucidation of the group of *Saprosites*, comprising the bark-living species, I append diagnoses of the following curious forms:—

Saprosites cancellatus.

Sublinearis, depressus, castaneo-rufus, glaber; capite minus convexo, crebre punctulato, clypeo antice transversim

1. Saprosites parallelus.

Saprosites parallelus, Harold, Col. Hefte, i. p. 81[1].

Hab. Panama, Volcan de Chiriqui (*Champion*).—South America, Colombia[1].

A large species with finely punctured head, coarsely crenate-striate elytra, and minute accessory tooth between the middle and upper teeth of the anterior tibiæ.

2. Saprosites cossonoides. (Tab. VI. fig. 22.)

Oblongo-linearis, depressus, niger, nitidus, capite antice pedibusque rufo-piceis; capite minus convexo, fere toto granulato et inter granula punctulato; thorace subquadrato, lateribus leviter rotundatis, sat dense et perspicue punctulato, punctis majoribus et minoribus intermixtis, basi immarginata; elytris exarato-striatis; striis punctulatis, interstitiis latis, usque ad apicem planis, prope apicem solum subtiliter punctulatis tibiis 4 posterioribus extus breviter carinulatis, apice longe spinosis; anticis dentibus tribus æqualiter distantibus.

Long. 2–3½ millim.

Hab. Mexico, Cordova (*Sallé*); Guatemala, San Juan in Vera Paz, Tamahu, San Gerónimo, Zapote (*Champion*); Panama, Volcan de Chiriqui (*Champion*).

The apical ventral segments, as in the allied *S. aspericeps,* Har., are soldered together and their sutures obliterated, with the suture of the apical segment laterally marked with a deep fovea.

EUPARIA.

Euparia, Lepeletier de Saint-Fargeau and Serville, Encycl. Méth. x. p. 357 (1825); Harold, Col. Hefte, vi. p. 19.

A genus peculiar, so far as at present known, to America, and found in the temperate zones North and South, as well as between the tropics. The expansion of the sides of the thorax seems the chief, if not the only, character which distinguishes it from *Atœnius.* Eleven species have been described.

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rugoso; thorace exacte quadrato, sat dense grosse punctato, punctis minoribus intermixtis, basi medio immarginata; elytris late exarato-striatis, striis eleganter cancellato-punctatis, interstitiis quam striæ parum latioribus, planis, prope apicem angustis subcarinatis; tibiis 4 posterioribus brevibus, latis compressis extus breviter carinatis, anticis dentibus æqualiter distantibus.

Long. 2½ millim.

Hab. Amazons, Ega; under bark.

Saprosites corticalis.

Sublinearis, depressus, castaneo-rufus, glaber; clypeo antice crebre granulato, fronte et vertice toto subcrebre punctulatis; thorace latiore, quadrato, dorso planato, lateribus parallelis, sat crebre subæqualiter punctato; elytris exarato-striatis, striis punctulatis, interstitiis planis, quam striæ duplo latioribus, apice paullo convexioribus; tibiis sicut in *S. cancellato.*

Long. 3 millim.

Hab. Amazons, Ega; under bark.

1. **Euparia tuberculata.** (Tab. VI. fig. 23.)

Brevis et lata, piceo-nigra, subnitida; capite grosse et dense punctato, clypeo medio leviter sinuato; thorace valde transverso, angulis omnibus subrectis, basi immarginata, prope angulos sat profunde sinuato, dorso antice punctulato postice grossius punctato, lateribus concavis explanatis, grossissime reticulato-punctato; elytris ovatis, humeris valide dentatis, lateribus rotundatis, punctato-striatis, interstitiis convexis, 2°–4^{m} versus apicem, 5°–9^{m} toto, grosse seriatim tuberculatis; tibiis tarsisque 4 posterioribus dense pubescentibus, tibiis longitudinaliter pluricarinatis, apice extus haud spinosis; corpore subtus femoribusque toto sparsim punctatis; mesosterno carinato.

Long. 5½ millim.

Hab. Panama, Bugaba (*Champion*). One example only.

ATÆNIUS.

Atænius, Harold, Col. Hefte, ii. p. 100 (1867); Horn, Trans. Am. Ent. Soc. 1871, pp. 284, 294.
Euparia (Serv.), pars, Burmeister, Stett. ent. Zeit. 1877, p. 408.

About eighty species of this genus have been described, all of uniform black or rufo-piceous colour, and, as Dr. Horn justly observes, in many cases difficult to discriminate. Although characteristic of the American fauna, tropical and temperate, the genus is not wholly restricted to the New World, several species being recorded from widely distant regions, such as Abyssinia, the Malay Archipelago, and Australasia. Most of the species obtained by Mr. Champion were found in sandy places, especially about the banks of streams.

I. *Clypeus with the sides of the emargination broadly rounded.*

1. **Atænius strigatus.**

Aphodius strigatus, Say, Journ. Ac. Nat. Sci. Phil. iii. p. 212 (1823)[1]; Complete Writings, ii. p. 137.
Atænius stercorator (Fabr.), var., Horn, Trans. Am. Ent. Soc. 1871, p. 286[2].
Euparia cognata, Lec. Proc. Ac. Phil. 1858, p. 65 (teste Horn).

Hab. North America, United States[1 2].—Mexico, Guajuco in Nuevo Leon (*Dr. Palmer*), Ventanas in Durango, Mexico city, Tlacotalpam, Mazatlan, Iguala, Villa Lerdo, San Juan Bautista in Tabasco (*Höge*).

2. **Atænius liogaster.**

A. strigato (Say) proxime affinis et simillimus. Minor, oblongus, convexus, nitidus; capite mediocriter convexo, clypeo leviter sinuato, transversim paullo strigoso, vertice plerumque sparsim subtiliter punctato; thorace sparsim irregulariter punctato, punctis minoribus interdum intermixtis, spatio laterali lævi polito, basi marginata; abdomine lævi, impunctato, interdum punctis nonnullis lateralibus; elytris crenato-striatis, interstitiis paullo convexis, politissimis; mesosterno opaco, argenteo-pubescente, medio breviter carinato.

♂?. Thorax latior, paullo crebrius punctatus, angulis posticis valde obtusis, sed distinctis.

♀?. Thorax angustior, lateribus leviter arcuatis, angulis posticis omnino rotundatis.

Long. 4–5 millim.

Hab. Mexico, Puebla, Vera Cruz (*Sallé*), Jalapa, Acapulco, Mazatlan, Villa Lerdo, Chilpancingo, Tapachula (*Höge*); Guatemala, San Gerónimo, Champerico,

Paraiso, Paso Antonio (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba (*Champion*).

Var. *A. castaniellus.* Oblongus, convexus, potius subcylindricus, castaneo-rufus; thorace punctis magnis paucis antice et lateribus late dispersis, antice subtilissime punctulatis, angulis posticis ♂ obtusis, ♀ rotundatis; elytris profundius striatis, interstitiis minus crenatis, striis apice profundioribus fundo cancellatis, interstitiis plus minusve subtilissime punctulatis; abdomine medio ♂ sparsim punctulato, ♀ lævi, lateribus grosse pauciter punctatis; mesosterno carina elongata vel nulla.
Long. 4 millim.

Hab. Guatemala, Zapote, San Gerónimo (*Champion*).

Notwithstanding its distinct facies *A. castaniellus* cannot be regarded as more than a variety of *A. liogaster*, examples intermediate in one or other of its characters being found in the same localities.

I have some hesitation in separating *A. liogaster* from *A. strigatus* (Say), in which also the sexes differ in the form of the hind angles of the thorax; but on comparing a large series with the numerous examples of *A. strigatus* before me (including several from Texas and more northerly localities), it shows a constant difference in its rather smaller size, deeper elytral striæ and more convex interstices, and smoother ventral segments. The sculpture of the head and thorax varies considerably, but preserves the same general character, the punctuation on the thorax being always sparser than in *A. cribrithorax*, larger and smaller punctures being intermingled, and spaces on the sides and sometimes near the base being quite smooth. The humeral callus and sides of the elytra are also quite free from punctures.

3. **Atænius cribrithorax.**

A. liogastri simillimus, sed differt ventro crebre punctato; ab *A. strigato* differt statura minore, thorace crebrius, lateribus (præcipue apud ♂) confluenter, punctato elytrisque callo humerali interstitiisque versus latera et apicem punctulatis.

♂. Thoracis angulis posticis distinctis basique juxta angulum utrinque leviter sinuato.

♀ ?. Thoracis angulis posticis obtusis, subrotundatis, sculpturaque sparsiore, elytrorum lateribus minus punctulatis.

Long. $3\frac{1}{4}$–$4\frac{1}{2}$ millim.

Hab. Mexico, Cordova (*Sallé*, *Höge*), Jalapa (*Höge*); Guatemala (*Sallé*), near the city (*Salvin*, *Champion*), El Reposo, Coatepeque, Zapote, Capetillo, Dueñas, Balheu, Chiacam, Cubilguitz, Tamahu, Sinanja, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui, San Lorenzo, Los Remedios (*Champion*).

In the punctured interstices at the sides and apex of the elytra, this species agrees with Von Harold's description of *A. stercorator* (Fabr.); but I have not seen any examples from Brazil, which country he includes in the range of his *A. stercorator*, and there can be little doubt that his description refers to a rather larger species, described further on as *A. strigicauda.* Among the very numerous examples I have

examined of *A. cribrithorax* there are some which nearly bridge over the difference between it and *A. strigatus* and *A. liogaster*.

I have adopted the name given to the species in the Sallé collection.

4. **Atænius strigicauda.** (Tab. VI. fig. 24.)

? *Atænius stercorator*, Harold, Berl. ent. Zeitschr. 1867, p. 281; Col. Hefte, xiii. p. 70 (nec Fabr.).

Hab. Mexico, Cordova, Tuxtla (*Sallé*), Jalapa (*Höge*); Guatemala, Paso Antonio (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama (*M'Leannan*).—South Brazil; Amazons (*Bates*); Antilles, St. Thomas.

The examples from the above-named localities, which I have examined and found closely to agree, appear to be referable to Von Harold's *A. stercorator*, which unfortunately is totally different from the Fabrician species, as proved by the type still in fair preservation in the Banksian collection at the British Museum. The present species was carefully and well described by Von Harold, with the exception, if I am not mistaken, that he overlooked the fine striæ on the sides of the elytral interstices near the apex; these striæ exist in all the specimens I have examined, and present a feature of some interest, as they are further developed in a series of allied species, and thus display in an incipient form an important group character. In all its other characters the species scarcely differs, except in its greater size, from the male of our *A. cribrithorax*.

A. stercorator (Fabr.) belongs to the same wider group as *A. strigicauda* (thorax margined at the base and clypeus rounded on each side of the anterior sinuation); it is a species of about the same size (6 millim.) and shape, but it is of a dull sooty-black colour, with the thorax closely and evenly punctured throughout, and the elytra not crenate-striate but sharply sulcated with an elegant catenulate-punctuation in the bottom of the furrows and the interstices convex, almost culminated. A remarkable distinguishing character of the species is a series of tubercles or denticulations at regular intervals on the inner side of the four hind tibiæ. Besides the Fabrician type captured by Sir Joseph Banks at Rio Janeiro on Cook's first voyage, the British Museum possesses a second example taken by Darwin in the same locality, during the voyage of the 'Beagle.' I have seen other examples from Rio Janeiro in Mr. A. Fry's rich collection.

We figure an example of *A. strigicauda* from Cordova.

5. **Atænius scutellaris.**

Atænius scutellaris, Harold, Col. Hefte, i. p. 82[1]; Ann. Soc. Ent. Belg. xix., Compt. Rend. p. xcvi[2].
? *Euparia atramentaria*, Erichs. Archiv für Naturg. 1847, i. p. 110.

Hab. Mexico, Ventanas, Chilpancingo, Acapulco, Tapachula (*Höge*); British Honduras (*Blancaneaux*); Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*).—South America, Colombia, Venezuela[2]; West Indies[2].

Similar in general form and size to *A. strigicauda*; the thorax rather more closely and

evenly punctured ; the elytral interstices convex, and behind gradually more carinated with conspicuous punctures on each side ; the scutellum concave, with a smooth carina down the middle ; and the outer apex of the four hinder tibiæ produced into a long acute spine. The species is possibly the *Euparia atramentaria*, Erichs., of Peru, but the absence of mention of the sculpture of the scutellum leaves the matter in uncertainty.

6. Atænius euglyptus.

A. scutellari affinis et similis, sed scutello plano, medio basi foveolato ; capite rufescente, toto æqualiter subdense punctulato ; thorace punctis majoribus et minoribus subdense intermixtis, lateribus grossius confluenter punctatis, basi subtiliter marginata utrinque versus angulum sinuato-truncata, lateribus antice late depressis et puncto magno ; elytris eleganter exarato-striatis et in strias punctatis, interstitiis (versus humeros punctulatis exceptis) lævibus, 1°–4^{m} dimidio basali planis, cæteris convexis, versus apicem acute carinatis ; tibiis 4 posticis apice longe spinosis.

Long. 5½ millim.

Hab. Mexico, Las Vigas (*Höge*).

Evidently very near *Euparia catenulata*, Erichs., of Peru, from which it differs in the plane interstices of the elytra.

7. Atænius perforatus.

Atænius perforatus, Harold, Col. Hefte, i. p. 83 [1].

Hab. Mexico, Cordova (*Sallé*) ; Guatemala, near the city, Aceituno, San Gerónimo, Balheu, Cubilguitz (*Champion*) ; Panama, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).—South America, Colombia [1].

A little larger and more convex than *A. strigicauda*, and with much more strongly punctured thorax ; the elytral interstices smooth, towards the apex carinated, and scored with a fine stria on each side. The scutellum has at the base two oblong foveæ.

8. Atænius complicatus.

Atænius complicatus, Harold, Col. Hefte, v. p. 102 [1].

Hab. Mexico, Chilpancingo (*Höge*) ; Guatemala, Zapote (*Champion*).—South America, Brazil [1].

Closely allied to *A. perforatus* and *A. euglyptus*, but the elytral interstices throughout acutely cariniform, and the surface beset with erect bristles. In consequence of the narrowed interstices the lateral scored line on the side of each, seen in a rudimentary form in most of the allied species, has here become a broad furrow separated from the stria proper by a lesser carina. The scutellum has in the middle of the base a large triangular opaque fovea. The base of the thorax is not margined, but in some examples a fine impressed line is seen on the deflexed edge in the middle.

9. **Atænius hirsutus.**

Atænius hirsutus, Horn, Trans. Am. Ent. Soc. 1871, p. 288[1].

Hab. North America, Arizona[1].—Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Presidio (*Forrer*).

Taken in abundance by Forrer. His specimens agree perfectly with Horn's description, and vary very little.

10. **Atænius setiger.**

Oblongus, niger, nitidus, thoracis elytrorumque lateribus rufo-castaneis pedibusque piceo-rufis, elytris griseo-setosis; capite mediocriter convexo, subtiliter transversim granulato-rugoso, clypeo sat anguste sinuato, angulis subacutis; thorace disco anteriore excepto grosse sparsim punctato et subtilissime punctulato, angulis posticis rotundatis; scutello lævi; elytris profunde crenato-striatis, striis versus apicem magis exaratis et fundo transversim punctatis, interstitiis subplanis, lævibus; ventro lævi, lateribus haud profunde sparsim punctatis.

Long. $3\frac{1}{2}$–$4\frac{1}{2}$ millim.

Hab. Mexico, Chilpancingo, Cuernavaca, Acapulco (*Höge*).

I can detect very little difference of form which can be supposed to be sexual. The hind angles of the thorax are in all examples rounded. The erect grey bristles of the elytra are numerous only over the apical half. The species comes nearest to *A. hirsutus*, Horn, the emargination of the clypeus and the distinct angle on each side being very similar in both; but the head and thorax are much more sparsely and finely sculptured.

11. **Atænius limbatus.**

A. strigato brevior et convexior præcipue elytris mox a basi convexis; nigro-piceus, nitidus, calvus, thoracis elytrorumque lateribus indefinite castaneo-rufis; capite lævi vel subtilissime punctulato, clypeo medio anguste et sat profunde sinuato, extus valde rotundato; thorace grosse irregulariter punctato, angulis posticis valde obtusis; elytris fortiter striatis, striis in fundo punctulatis, interstitiis convexis, lævibus, versus apicem angustis ibique 1°–4^{m} elongatis, 5°–6° abbreviatis; corpore subtus glabro, abdomine toto punctato, mesosterno opaco.

Long. $4\frac{1}{2}$ millim.

Hab. Mexico, Presidio (*Forrer*).

Agrees with the preceding in the castaneous borders of the thorax and elytra; but perfectly glabrous, and the clypeus differing in the sides of the emargination being very obtusely rounded, not angulated.

12. **Atænius capitosus.**

Atænius capitosus, Harold, Col. Hefte, i. p. 83[1].

Hab. Mexico[1], Cordova, Tuxtla (*Sallé*), Las Vigas (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, El Tumbador, Las Mercedes, Cerro Zunil, Mirandilla, Zapote, Cahabon (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Bugaba (*Champion*).—South America, Ecuador, Amazons; Antilles, St. Thomas.

The largest species of the genus, 7–8 millim. long. The thorax is not margined at the base, except near the lateral angles.

13. **Atænius imbricatus.**

Aphodius imbricatus, Melsh. Proc. Ac. Phil. 1844, p. 136[1].
Atænius imbricatus, Horn, Trans. Am. Ent. Soc. 1871, p. 285[2].
Atænius sordidus, Harold, Col. Hefte, v. p. 103[3].

Hab. North America, Pennsylvania[1].—Mexico[2 3], Guanajuato (*Sallé*), Jalapa, Mazatlan (*Höge*); Honduras[2] (*Sallé*).—South America, Amazons[2], Brazil[2]; Antilles, Cuba[2].

14. **Atænius gracilis.**

Oxyomus gracilis, Melsh. Proc. Ac. Phil. 1844, p. 137[1].
Atænius gracilis, Harold, Berl. ent. Zeitschr. 1867, p. 281[2]; Chevr. Ann. Soc. Ent. Fr. 1864, p. 414[3]; Horn, Tr. Am. Ent. Soc. 1871, p. 286[4].

Hab. North America[1 2 4].—Mexico, Northern Sonora (*Morrison*), Presidio (*Forrer*), Cordova (*Sallé*), Vera Cruz (*Sallé*, *Höge*), San Juan Bautista in Tabasco (*Höge*); Guatemala, near the city, Capetillo, Cubilguitz, Paso Antonio (*Champion*); Nicaragua, Chontales (*Janson*).—South America[2]; West Indies[2 3].

In its narrow sublinear form this insect approaches the species of Section II. The outline of the clypeus is different from that of *A. strigatus* and its allies, for although the sides of the emargination are not pointed, they are slightly angulated and not broadly rounded. *A. gracilis* may be distinguished from other small and narrow species by the more or less distinct dorsal furrow of the thorax.

II. *Clypeus acuminated or dentate on each side of the emargination.*

15. **Atænius figurator.**

Atænius figurator, Harold, Col. Hefte, xii. p. 24[1].

Hab. North America, Louisiana[1].—Mexico, Presidio (*Forrer*), Cordova (*Sallé*), Frontera in Tabasco, Zacualtipan, Durango city (*Höge*).

A sublinear species with polished, impunctate, and flat elytral interstices. Harold did not include it in the group with bidentate clypeus; but the numerous examples which I have examined, and which otherwise agree with his description, show the points on each side of the emargination very conspicuously.

16. **Atænius polyglyptus.**

Oblongus, mediocriter convexus, niger, obscurus, parum nitidus; capite postice crebre punctulato, medio con-

vexo sublævi, lateribus confluenter punctato quasi corroso, clypeo ruguloso, rufescente, minute bidentato; thorace dense regulariter punctato, basi marginata, angulis posticis rotundatis; scutello rugoso-opaco, margine lævi; elytris subtiliter catenulato-punctato-striatis, interstitiis paullo convexis, latis, intus grosse crenato-punctatis, extus seriatim punctulatis et leviter carinatis, medio lævibus (lateralibus toto punctatis), prope apicem angustis et punctatis; abdomine, metasterno femoribusque sat dense punctatis, mesosterno opaco griseo-pubescente, inter coxas carinato.

Long. 3–3¼ millim.

Hab. GUATEMALA, near the city, Capetillo, Dueñas, Zapote (*Champion*). A large number of examples.

Similar at first sight to *A. gracilis*, but a trifle broader and more convex, and the thorax wanting the impressed dorsal line characteristic of that species. Allied to *A. sculptilis* and *A. steinheili*, Harold, but smaller and different in the sculpture of the elytra.

Var. *A. intermedius*. Elytra et thorax sicut in *A. polyglypto* typo, sed capite sicut in *A. scalptifronte* creberrime subconfluenter punctulato, medio longitudinaliter substrigoso.

Hab. PANAMA, Volcan de Chiriqui (*Champion*). Two examples.

Var. *A. jalapensis*. Thorace dorso minus dense punctato (lateribus crebre confluento-punctatis) elytrorumque interstitiis extus uniseriatim conspicue punctatis, convexis, nec carinatis.

Hab. MEXICO, Jalapa (*Höge*).

Var. *A. hieronymi*. Nitidior, semper piceo-rufus vel castaneus; thorace disco subdisperse, lateribus crebrius punctatis; elytris subtilius sculpturatis, interstitiis extus leviter convexis (conspicue uniseriatim punctatis); ventro punctato, metasterno femoribusque subtiliter et sparsim punctulatis.

Hab. GUATEMALA, San Gerónimo (*Champion*). Numerous examples.

17. **Atænius scalptifrons.** (Tab. VI. fig. 25.)

Oblongus, mediocriter convexus, fuligineus, opacus, capite creberrime confluenter punctulato, medio longitudinaliter substrigoso, clypeo paullo læviore granulato-rugoso; thorace creberrime subconfluenter punctulato, linea dorsali leviter impressa; elytris subtiliter catenulato-punctato-striatis, interstitiis intus planis crenatis, extus anguste carinulatis et seriato-punctulatis; humeris spina magna armatis; corpore subtus femoribusque sat crebre punctatis.

Long. 3½ millim.

Hab. MEXICO, Cordova (*Sallé*); GUATEMALA, near the city (*Champion*).

Evidently allied to *A. steinheili*, Harold, from Colombia, but differing in the peculiar sculpture of the head, the close punctures of the vertex running into fine longitudinal rugæ on the forehead and leaving only the margin of the clypeus a little smoother, with a few transverse granular wrinkles. The sculpture of the elytra would agree pretty well with the description of *A. steinheili* if we take the "tief und ziemlich breit gestreift" of Von Harold as meaning the superficial appearance only; for the striæ proper are narrow, and it is only the elevation of the outer side of the interstices into

narrow carinæ which produces the effect of broad striæ, part of each interstice being depressed together with the striæ.

We figure a typical example from Cordova.

18. **Atænius carinator.**

Atænius carinator, Harold, Col. Hefte, xii. p. 20[1].

Hab. PANAMA, Bugaba, David (*Champion*).—SOUTH AMERICA, Venezuela [1].

Differs from *A. scalptifrons*, to which it is very closely allied, by the humeral spine of the elytra being, as usual in the group, very short. The carinæ of the interstices are, besides, much higher and narrower and granulated, the remainder of each interstice, with its feebly carinated striæ, forming thereby broad furrows.

Mr. Champion's specimens are rather smaller ($2\frac{1}{2}$ millim.) than the size ($3\frac{1}{2}$ millim.) given by Von Harold.

19. **Atænius abditus.**

Aphodius abditus, Haldem. Journ. Ac. Phil. 1848, p. 106[1].
Atænius abditus, Horn, Trans. Am. Ent. Soc. 1871, p. 289[2].
Atænius attenuator, Harold, Col. Hefte, xii. p. 22[3].

Hab NORTH AMERICA, United States [1 2].—MEXICO [3], Northern Sonora (*Morrison*), Nuevo Laredo (*Höge*), Presidio (*Forrer*).

Of more elongate form (the elytra especially relatively longer) than *A. polyglyptus* and its allies, in this respect approaching *A. figurator*. The sculpture above and beneath is very similar to that of *A. polyglyptus*, var. *hieronymi*, but the line of fine punctures along the outer side of the interstices is less conspicuous and often confused. The following appears to be a var.; it was received, together with more typical examples, from Belfrage, and communicated to me by Von Harold.

Var. *A. texanus*, Harold, Col. Hefte, xii. p. 23. Thorace antice sublævi elytrorumque interstitiis convexis.

Hab. NORTH AMERICA, Texas (*Belfrage*).

20. **Atænius inops.**

Atænius inops, Horn, Trans. Am. Ent. Soc. xiv. p. 73 (March 1887)[1].

Hab. NORTH AMERICA, Arizona[1] (*Morrison*).—MEXICO, Northern Sonora (*Morrison*).

Numerous examples sent by Morrison. This insect differs from *A. abditus* in the rather sparser puncturing of the sides of the thorax and the somewhat flatter elytral interstices, and, what is more important, in the shortness of the basal joint of the four posterior tarsi. The colour is always reddish-testaceous, shining. Length 4 millim.

21. Atænius mariarum.

Brevius, oblongo-ovatus, valde convexus, postice paullo ampliatus, niger, nitidus, femoribus rufis; capite lævi, clypeo profunde triangulariter emarginato, utrinque angulato et breviter dentato, sparsim transverse ruguloso; thorace transversim quadrato, angulis posticis rotundatis, lævi (punctis nonnullis versus angulos anticos exceptis), basi late sulcato-marginata; elytris profunde catenulato-striatis, interstitiis passim vix convexis, impunctatis, intus perparum crenatis, 4° apice abbreviato; tibiis 4 posticis apice valde dilatatis et extus robuste spinosis, intermediis dimidio basali extus serratis; tarsis articulo basali mediocriter elongato; ventro lævi, segmentis duobus apicalibus margine anteriore grosse crenato-punctatis.
Long. $5\frac{1}{2}$ millim.

Hab. Mexico, Tres Marias Islands (*Forrer*), Manzanillo (*Höge*).

By its somewhat shortened hind tarsi this species approaches the genus *Psammodius*; the hind tibiæ, however, are prolonged into a spine at their outer apex, and the spurs long and tapering as in *Atænius*.

RHYSSEMUS.

Rhyssemus, Mulsant, Col. de France, Lamellicornes, p. 314 (1842); Erichson, Ins. Deutschl. p. 909; Horn, Trans. Am. Ent. Soc. 1871, p. 290.

About five-and-twenty species of this genus have been described. They are spread over the warmer temperate and tropical zones of the Old World, including Australia, Madagascar, and the Malay Archipelago; but in the New World seem confined to the temperate portions of North America. The following, from Northern Mexico and Guatemala, is, however, an exception.

1. Rhyssemus cristatellus.

Subelongatus, fere cylindricus, niger, opacus, elytris cinereo-fuscis, pedibus rufo-piceis; capite grosse granulato, vertice medio oblique bicarinato, clypeo angulariter emarginato et utrinque angulato; thorace setis clavatis pallidis marginato, supra rugis quatuor, opacis, granulatis, elevatis transversis, medio subinterruptis, et extus per paria approximatis, partibus depressis subtiliter, margine antico grossius, granulatis; elytris subtiliter punctato-striatis, interstitiis extus anguste carinatis carinisque uniseriatim eleganter pallido-setosis, carinis (una cum serie setorum) 2, 4 et 6 longe ante apicem abbreviatis; pedibus posticis calcaribusque gracilibus, tarsis articulo 1° elongato, tenui.
Long. $2\frac{1}{3}$–3 millim.

Hab. Mexico, Presidio (*Forrer*), San Juan Bautista in Tabasco (*Höge*); Guatemala, Paso Antonio (*Champion*).

One example only from Paso Antonio, much smaller than the numerous specimens from Presidio.

PSAMMODIUS.

Psammodius (Gyll.), Lepeletier de Saint-Fargeau & Serville, Encycl. Méth. x. p. 359 (1825); Latreille, Règne Anim. (ed. 4) ii. p. 593; Lacordaire, Gen. Col. iii. p. 121; Mulsant, Col. de France, Lamellicornes, p. 320; Horn, Trans. Am. Ent. Soc. 1871, p. 291.
Psammobius, Heer, Faun. Helvet. i. p. 531 (1841); Gemminger & Harold, Cat. Col. iv. p. 1068.

This genus has a somewhat wider range than *Rhyssemus*. Equally with that genus spread over the eastern hemisphere, it occurs, though in species of diminished size, throughout Tropical America. Upwards of thirty species have been described.

1. Psammodius quinque-plicatus.

Psammodius 5-*plicatus*, Horn, Trans. Am. Ent. Soc. 1871, p. 292[1].

Hab. North America, Arizona[1].—Mexico, Northern Sonora (*Morrison*).

2. Psammodius culminatus.

P. quinque-plicato similis, sed differt thoracis rugis elevatis granulatis. Anguste oblongo-ovatus, nitidus; capite verrucoso, vertice lævi; clypeo sat anguste emarginato, extus rotundato; thorace toto granulato, sed nitido, utrinque sulcis quinque (nec medium nec latera attingentibus), 1° juxta marginem anticum, 4° magis obliquo et curvato, linea dorsali late impressa; elytris sat acute punctulato-striatis, interstitiis medio culminato-convexis et (præcipue versus latera et apicem) subtiliter granulatis; tarsis posticis articulo 1° brevi, sat late triangulari.

Long. $3\frac{1}{4}$ millim.

Hab. Mexico, Presidio (*Forrer*), Jalapa, Mexico city (*Höge*).

Two examples from Jalapa and Mexico city are pitchy-black; the others are reddish-testaceous like *P. quinque-plicatus*.

3. Psammodius veræcrucis.

P. cælato (Lec.) proxime affinis, sed elytris multo minus ventricosis; valde convexus, rufo-testaceus, glaber; capite minus grosse verrucoso, occipite lævi, clypeo triangulariter emarginato, extus angulato; thorace utrinque lineis transversis quinque grossissime punctatis quarum duobus solum latis et profundis, dorso anteriore lævi, posteriore grossissime confuse punctato; elytris acute exarato-striatis, striis fundo punctatis, interstitiis supra planis.

Long. $2\frac{1}{2}$–$2\frac{3}{4}$ millim.

Hab. Mexico, Vera Cruz, Tapachula in Chiapas (*Höge*).

Allied to the Californian *P. cælatus*, Lec., but the elytra, though very convex, not ventricose as in that species. The very coarse sculpture of the thorax is similar, but there are tolerably distinct rows of punctures between the transverse sulci, the elevated parts being quite smooth in both species. The sculpture of the elytra differs from that of *P. cælatus* only in the striæ being much deeper.

Resembles also the *P. quinque-plicatus*, Horn, but the elytra are more ovate and the thorax has not the five equally impressed sulci of that species.

Herr Höge obtained a very large series of examples at Vera Cruz, which offer scarcely any individual variation. Two examples also were captured at Tapachula on the Pacific slope.

4. Psammodius micros.

Brevis, sat anguste oblongus, nigro-piceus, politus; capite verrucoso, vertice lævissimo, clypeo sat profunde angulatim emarginato; thorace pauciter grosse punctato, sulco utrinque profunde punctato, prope marginem

anticum alteraque breviore posteriore, basi marginato lineaque abbreviata dorsali; elytris catenulato-striatis, interstitiis planis, subtiliter rugulosis, intus vix crenatis.

Long. 2 millim.

Hab. Guatemala, Capetillo, Dueñas (*Champion*).

Closely allied to the South-European *P. sabulosus*, Muls. It has the same general form and colour, and structure of legs, and also a similar sculpture of the head and thorax; but it is very much smaller; the vertex for a wide space is perfectly smooth and polished; the punctures of the thorax are smaller and more widely spaced; and the punctures of the elytra are confined to the bottom of the neatly-ploughed striæ, scarcely crenating the sides of the interstices.

5. **Psammodius parvulus.**

Psammodius parvulus, Chevr. Ann. Soc. Ent. Fr. 1864, p. 415 [1].

Hab. Mexico, Presidio (*Forrer*); Guatemala, Dueñas, Paraiso (*Champion*).—South America, Amazons; Antilles, Cuba [1].

Very closely allied to *P. micros.* Smaller ($1\frac{1}{2}$ millim.); colour reddish-testaceous, the head and thorax castaneous with paler margins, and the latter having one lateral transverse groove only. In the identification there is a difficulty in the phrase used by Chevrolat, "elytris striato-punctatis," as this does not accurately express the sharply catenulate-punctate striæ.

6. **Psammodius integer.**

Oblongus, convexus, glaber, nitidus, castaneus; capite lato, verrucoso, occipite lævissimo; clypeo late et minus profunde triangulariter emarginato, utrinque angulato, acuto; thorace sat magno, lateribus arcuatis, postice magis quam antice angustato, angulis posticis nullis, supra mediocriter punctato, punctis minutissimis intermixtis, sulcis transversis nullis foveaque sola prope angulos anticos, lateribus medio sublævibus, convexis; elytris fortiter crenato-striatis; carina mesosterni elongata.

Long. $2\frac{2}{3}$ millim.

Hab. Mexico, Vera Cruz (*Höge*).

This species connects *Atænius* with *Psammodius.* It differs entirely from the former by its robust broad hind tibiæ (subserrate and setose along their outer edge and not prolonged into a spine at the outer apex), by their robust spurs (which, however, are obtusely pointed at their apices rather than spatulated), and by the short tarsi, in which the basal joint is very much broader than the others. On the other hand, the head and thorax are constructed as in the second section of *Atænius*, the latter showing no trace of the transverse furrows of *Psammodius* except a well-marked and large fovea near the anterior angles.

Fam. ORPHNIDÆ.

ÆGIDIUM.

Ægidium, Westwood, Trans. Ent. Soc. Lond. iv. p. 173 (1846).

An exclusively Tropical-American genus. Five species have been described.

1. Ægidium colombianum.

Ægidium colombianum, Westw. Trans. Ent. Soc. iv. p. 174, t. 12. ff. 7, 8[1]; Lacord. Gen. Col., Atlas, t. 28. f. 1.

Hab. COLOMBIA; VENEZUELA [1].

Var. *cribratum*. (Tab. VII. figg. 1, ♂; 1 *a*, side view of head and thorax; 2, ♀.)

A typo differt toto corpore fortius et densius (capite creberrime) punctato; elytris (♀) interdum confluenter confertim punctatis.

Long. 10–14 millim. ♂ ♀.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Var. *squamatum*.

Crebre punctatum, punctis omnibus squama incumbente conspicua fulva munitis.

Long. 12–14 millim. ♂ ♀.

Hab. NICARAGUA, Chontales (*Janson*).

The two varieties described agree in all structural points with *Æ. colombianum*, but differ from it greatly in their denser and coarser punctuation, especially of the upper surface. Westwood describes the head and thorax as smooth and shining: in a Venezuelan example I find them sprinkled with minute points, denser, however, on the anterior part of the head. Flat scales in the punctures are visible, at least on the elytra, in the typical species; but they are very conspicuous, and give a tawny-brown tint to the whole body, in the var. *squamatum*.

OCHODÆUS.

Ochodæus, Lepeletier de Saint-Fargeau & Serville, Encycl. Méth. x. p. 360 (1825); Westwood, Trans. Ent. Soc. Lond. n. s. ii. p. 63 (1852); Horn, Trans. Am. Ent. Soc. 1876, p. 177.

A genus of very wide distribution, but the species are nowhere abundant in individuals. The majority inhabit the temperate zone of both the Eastern and Western hemispheres; the remainder being sparingly scattered over South America, and tropical Asia and Africa. Twenty-five species have been described; but, as is evident on reading Dr. Horn's excellent analysis of the North-American forms, it is impossible to discriminate them without close attention to the sexual differences and various peculiarities of

structure, especially in the males—the form, colour, and sculpture offering little diversity and apparently varying in many cases.

1. Ochodæus luridus.

Ochodæus luridus, Westw. Trans. Ent. Soc. Lond. n. s. ii. p. 67, t. 9. f. 4[1].

Hab. Mexico[1] (*Sallé*).

I refer an example in the Sallé collection to this species, as it agrees with Westwood's description in size (9 millim.) and sculpture; but if it represents the same species it must be the opposite sex, as it shows no traces of the two tubercles between the eyes. The forehead is concave, and the arcuated and thickened rim of the clypeus is terminated on each side by a large tubercle; the epistoma below in front is flattened, and also has a thickened rim on its front margin.

2. Ochodæus præsidii.

Paullulum oblongus, testaceo-fulvus, nitidus, erecte hirsutus; capite crebre asperato-punctato, fronte transversim depressa, clypeo margine antico duplici carinis æqualibus perparum incrassatis arcuatis parallelis, superiore utrinque leviter tuberculata; thorace dense asperato-punctato, linea dorsali postice profunda; elytris punctato-striatis, interstitiis convexis, sat sparsim setifero-punctatis, apice suturali recto; propygidio medio canaliculato; tibiis anticis apice intus acutis nec productis, extus denticulo 3° remoto, posticis mox a basi intus usque ad apicem dilatatis, intus inermibus; femoribus posticis lamina inferiore sat lata, apice hamato-dentato; tarsis posticis articulo basali gracili elongato.

Long. $6\frac{1}{2}$ millim. ♂?

Hab. Mexico, Presidio (*Forrer*). One example.

Differs from all other species here enumerated in the apparently double clypeus, which results from the true clypeal margin being not at all thickened, or vertically declivous in front; the epistome is consequently nearly on the same level, and having an equally distinct and similarly arcuated anterior margin it looks like a duplication of the clypeus proper. A similar structure seems to be exhibited by the North-American species *O. ulkei*, *O. simplex*, and *O. musculus*, the last mentioned having, however, a thickened margin.

3. Ochodæus setulosus. (Tab. VII. fig. 3.)

Breviter oblongo-ovatus, vix nitidus, castaneo-rufus vel fulvus, supra densissime æqualiter sat breviter setosus; capite ruguloso-punctato, fronte transversim depressa, clypeo arcuato utrinque tuberculato, margine incrassato et subverticali, epistomate infra quadrato, planato; thorace creberrime asperato- vel granulato-punctato, linea media dorsali lævi postice haud impressa; elytris punctato-striatis, interstitiis parum convexis, irregulariter bi- et triseriatim punctulatis, apice rotundatis, sutura recta; tibiis anticis apice intus paullo productis acutis, extus denticulo tertio lato versus basin; tibiis posticis normalibus, femoribus infra lamella solum prope apicem triangulari.

Long. $5\frac{1}{2}$–7 millim.

Hab. Mexico, Cordova (*Sallé*), Vera Cruz (*Höge*).

Four examples, presumably of the same sex, as they offer no difference in the head

or hind tibiæ, and very little in the size and form of the plate at the apex beneath of the hind femora. One specimen differs in the punctuation of the elytral interstices being less dense and the surface consequently more shining. The much thickened clypeal margin is strongly arcuated, scarcely hemi-hexagonal; its front face is rather high and subvertical, and at its foot is flattened out into what I term the epistome, to the very slightly thickened anterior margin of which the labrum is articulated.

4. **Ochodæus ——?**

Hab. Guatemala, San Isidro (*Champion*).

A single example, possibly the other sex of the preceding; but differing in the longer and softer pubescence of the elytra, as well as in the absence of tubercles from each end of the arcuated rim of the clypeus.

5. **Ochodæus ——?**

Hab. Mexico, Villa Lerdo in Durango (*Höge*).

A single example, apparently allied to the North-American *O. musculus*.

6. **Ochodæus pollicaris.** (Tab. VII. fig. 4.)

Piceo-castaneus vel fulvus, nitidus, erecte hirsutus, antennis fusco-piceis; capite thoraceque sat grosse discrete punctatis nec asperatis, clypeo valde arcuato et margine incrassato utrinque late tuberculato, antice verticali, epistomate plano, polito; elytris striato-punctatis, interstitiis parum convexis et sparsim punctulatis, apice suturali rectangulo; tibiis anticis apice intus processu elongato et lato deflexo armatis, extus denticulo 3° cæteris minus remoto; femoribus posticis apice infra lamella sat magna triangulari, tibiis simplicibus; ventris segmento apicali dense punctulato.

Long. $7\frac{1}{2}$–$8\frac{1}{2}$ millim. ♂?

Hab. Panama, Volcan de Chiriqui (*Champion*). Two examples.

Apparently closely allied to the Colombian *O. rugatus*, Westw., having, like that species, a coarsely and subremotely punctured thorax; the form of the clypeus, however, differs both from the description and the figure. The remarkable thumb-like process at the inner apex of the anterior tibiæ appears not to exist in Westwood's species, judging from the figure and description.

Fam. HYBOSORIDÆ.

CŒLODES.

Coilodes, Westw. Trans. Ent. Soc. Lond. iv. p. 163 (1845).
Cœlodes, Lacordaire, Gen. Col. iii. p. 135 (1856).

Eight species of this genus have been described, all American except one—Australian

—referred to it by W. Macleay. *Cœlodes* has not yet been detected in temperate North America, but occurs in temperate South America (in Chili).

1. **Cœlodes castaneus.** (Tab. VII. fig. 5, ♂.)

Coilodes castaneus, Westw. Trans. Ent. Soc. Lond. iv. p. 165[1].

Hab. Nicaragua, Chontales (*Janson*); Costa Rica, Volcan de Irazu (*Rogers*).—South America, Colombia[1].

A male example from Irazu is figured.

2. **Cœlodes (?) —— ?**

Hab. Guatemala, Zapote (*Champion*).

A single very small example; undeterminable.

Fam. GEOTRUPIDÆ.

ATHYREUS.

Athyreus, Macleay, Horæ Entom. i. p. 123 (1819); Klug, Abhandl. Akad. Berlin, 1845, p. 21; Westwood, Trans. Linn. Soc. xx. p. 453 (1851).

About forty species of this distinct and very remarkable genus have been described. It is distributed over the tropical zones of the three great continents, but is much more numerously represented in America than in Asia or Africa, and extends there into the south temperate zone as far as Buenos Ayres. The North-American species referred to it by various authors belong to a different genus, *Bradycinetus*, Horn.

These insects are found flying close to the ground amongst low herbage just before dark, and are often attracted to light (*Champion*).

1. **Athyreus championi.** (Tab. VII. figg. 6, ♂; 6 *a*, side view of head and thorax.)

A. bifurcato (Macleay) similis, sed corpore subtus et pedibus (coxis anticis fulvis exceptis) nigris thoracisque cornu aliter formato. Subcyaneo-niger, undique (apud elytra brevius) erecte pilosus; capite thoraceque medio punctatis, hoc lateribus totis granulatis; elytris costulis lævibus septem, interstitiis triseriatim granulato-punctatis; corpore subtus fusco-piloso; antennis nigris, clava piceo-rufa.

♂. Clypeus medio cornu verticali elongato acuto armatus; thorax medio dorso convexo et cornu robusto alte erecto, apice tridentato, dente posteriore multo altiore armatus.

Long. 17 millim.

Hab. Panama, Volcan de Chiriqui 3000 feet (*Champion*). One male example only.

In the armature of the head and thorax resembling Klug's figure of *A. tridens*, but totally different in colour. The single example seems to be a more highly developed male than the one known to Klug, both the clypeal and thoracic horns being

considerably larger. The three species *A. bifurcatus*, Macleay, *A. tridens*, Klug, and *A. championi* are, however, very closely allied.

2. **Athyreus fissicornis.** (Tab. VII. figg. 7, ♂ ; 7 *a*, side view of head and thorax.)

Athyreus fissicornis (Klug, MS.), Harold, Stett. ent. Zeit. 1880, p. 45 [1].

Castaneo-fulvus dorso castaneo-fuscus, vel toto fulvo-testaceus, capite thoraceque crebre (in locis concavis sparsius) granulatis ; elytris dense granulato-punctatis, sed sat nitidis, striis paucis versus basin obsoletis ; epistomate prope marginem anticum transverse carinato ; clypeo breviter tridentato, fronte profunde concava ; thorace fere sicut in *A. pholas*, Westw. (Trans. Linn. Soc. xx. t. 22. f. 8), dorso profunde concavo carinaque utrinque flexuosa medio late dentata et postice intus inflecta, margine antice medio valide dentato.

♂ *major*. Thoracis dente anteriore alto valido, apice bicuspidato ; carinis postice intus curvatis nec versus marginem posticum parallelis.

♂ *minor et* ♀. Thoracis dente anteriore minore, apice acuminato ; carinis postice intus ramulum brevem emittente deinde versus marginem posticum continuatis parallelis.

Long. 10–11 millim.

Hab. Mexico [1], Cordova (*Sallé*), Jalapa (*Höge*) ; Guatemala (*Sallé*).

The armature of the thorax can be best understood on referring to Westwood's figure of *A. pholas*, an allied Colombian species. The carinæ which limit the deep dorsal concavity are flexuous both vertically and laterally ; about the middle they rise highest and there form a large triangular tooth, each slightly curving towards its *vis-à-vis*, and behind they curve sharply inwards. In *A. pholas* the opposite carinæ behind meet at the dorsal line, but in *A. fissicornis* they stop far short of it. The strong tooth or spine rises vertically from the middle of the anterior margin as represented in Westwood's figure, but in well-developed males it is higher, reaching nearly to the level of the thorax, and broad and cleft at the apex ; in males of lesser development (or females ?) the spine is shorter and pointed as in *A. pholas* and *A. trituberculatus* (Klug), and a little removed from the margin. The carinæ in the same individuals differ in continuing, behind, parallel to each other, and emit a small branch inwardly towards the dorsal line, exactly as represented in Westwood's figure of *A. reichei* ; this latter is doubtless the female of a species allied to *A. fissicornis*, in which the sides of the clypeus are obtuse. The anterior tibiæ have six teeth.

A male specimen from Mexico is figured.

3. **Athyreus tridenticeps.** (Tab. VII. figg. 8, ♂ ; 8 *a*, side view of head and thorax)

A. tridentato (Klug) similis et affinis, quoad colores haud differt, rufescenti-fulvus, supra (thoracis lateribus fulvis exceptis) saturate castaneo-fuscus, dense pubescens pilis rarioribus elongatis intermixtis ; capite acute granulato, fronte plana declivi, clypeo reflexo, valide tridentato fere spinoso, dente mediano majore robusto antice ab epistomatis basi surgente ; thorace dense granulato, margine juxta foveolam indentato et antice medio tuberculo parvo, dorso excavato, fundo irregulari, longitudinaliter sulcato et juxta marginem anticum profunde foveato, ibique et postice sublævi, carinis duabus verticaliter valde flexuosis,

medio late dentatis, postice intus leviter curvatis deinde versus marginem posticum rectis; elytris dense granulatis, utrinque striis obsoletis quatuor; tibiis anticis extus 5-dentatis.

♀? Clypei dentibus minoribus, mediano antice usque ad epistomatis basin declivi nec verticali; thorace medio minus profunde excavato, fovea magna anteriore obsoleta fundo omnino granulato.

Long. 13–14 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*). Many examples.

Resembles much, though undoubtedly specifically distinct from, the Brazilian *A. tridentatus*; it differs in many points—notably in the sharp elevated triangular tooth in the middle of the thoracic carinæ, and the parallel prolongation of the latter towards the hind margin; and also in the different elytral sculpture, which consists of definite granules without punctures or rugosity *.

4. **Athyreus excavatus.**

Athyreus excavatus, Casteln. Hist. Nat. Ins. Col. ii. p. 103 (1840)[1]; Klug, Abhandl. Akad. Berlin, 1843, p. 27, t. 1. ff. 9, 9 *a*[2]; Westw. Trans. Linn. Soc. xx. t. 22. f. 9[3].

Forma typica. Tibiæ anticæ 4-dentatæ.

Hab. Mexico, Tehuantepec (*Sumichrast, in coll. Sallé*), Cordova, Vera Cruz (*Höge*); Costa Rica, Cache (*Rogers*); Panama (*M'Leannan*).—South America, Cayenne[1], British Guiana[2], Orinoco[3].

Var. Tibiæ anticæ 5-dentatæ.—*A. mexicanus*, Klug, Abhandl. Akad. Berlin, 1843, p. 29, t. 2. ff. 4, 4 *a*[1].

Hab. Mexico, Cordova, Juquila (*Sallé*); Guatemala, Coatepeque (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).—South America, Pernambuco (*Forbes*), Bahia (*Lacerda*[1]).

Var. Tibiæ anticæ 6-dentatæ.—*A. lanuginosus*, Klug, Abhandl. Akad. Berlin, 1843, p. 28, t. 2. ff. 2, 2 *a*[1].

Hab. Mexico, Jalapa (*Höge*), Peras (*Sallé*); Guatemala, El Reposo (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica, Cache (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America, Venezuela[1], British Guiana, Cayenne, Amazons, Bahia[1].

This appears to be a tolerably common and widely spread species in the northern parts of Tropical America. The characters on which Klug relied in separating it into

* Another Brazilian species exists in collections which is liable to be mistaken for *A. tridenticeps*. The following brief description will perhaps suffice to distinguish it:—

Athyreus catharinæ, n. sp.

Quoad colores *A. tridentato* simillimus, elytris adhuc minus granulatis, sed crebre subrugulose punctatis; differt clypeo spina mediana robusta elongata thoracisque carinis medio valde approximatis ibique uncinato-dentatis, concavitate postice dilatata lævi.

Long. 13 millim.

Hab. Brazil, Santa Catharina. Two examples, both males.

three, viz. the number of teeth on the anterior tibiæ and the larger or smaller impunctate space on the hind slope of the large and broad thoracic excavation, prove, on the examination of more abundant material than he possessed, to be of no specific importance. As the localities above recorded show, all three forms occur in the same places from Mexico to Bahia; and the close examination of about forty examples from the various localities reveals no difference whatever of colour, form, or sculpture between examples which otherwise differ in the number of the tibial teeth. Specimens, further, occur in which the uppermost tooth is shown in a transitional state, *i. e.* instead of a distinct saw-like toothlet it is more or less rounded. The granulation of the hinder slope of the suboval concavity of the thorax varies in the male according to its degree of development; and in the female, which is very much rarer than the male, the whole of the concavity is uniformly granulated, besides being much shallower than in the male.

The size varies from 8 to 13 millim.

BOLBOCERAS.

Bolboceras, Kirby, Trans. Linn. Soc. xii. p. 459 (1818); Erichson, Ins. Deutschl. iii. 1, p. 744; Klug, Abhandl. Akad. Berl. 1843, p. 36; Westwood, Trans. Linn. Soc. xxi. p. 11 (1852).

Upwards of a hundred species of this well-known genus have been described. It has a wider range than *Athyreus*, being numerously represented in warm temperate latitudes. An interesting feature is the great number and variety of its species in Australia, which seems, in fact, to be its metropolis. Tropical America yields a comparatively small number.

1. **Bolboceras sallæi.** (Tab. VII. figg. 9, ♂; 9 *a*, side view of head and thorax.)

B. (*Bradycineto*) *serrato* (Lec.) simillimus, sed coxis intermediis sicut in *Bolboceratis* typicis approximatis. Rotundato-quadratus, fulvo-ferrugineus, nitidus, capite rugoso-punctulato, fronte transversim depressa, clypeo valde elevato-carinato, supra late quadrato, angulis obtuse dentatis; thorace antice retuso sparsim punctato et supra obtuse quadridentato, lateribus utrinque foveis punctatis duabus et inter foveas oblique carinatis, postice sparsim plagiatim punctato, linea dorsali subtili, marginibus crenatis; scutello lævi; elytris subtiliter striatis, striis punctulatis.

Long. 17 millim. ♂?

Hab. Mexico, Valle Real (*Sallé*), Lagos in Aguas Calientes (*Höge*).

2. **Bolboceras arcuatus.** (Tab. VII. figg. 10, ♂; 10 *a*, side view of head and thorax.)

Breviter ovatus vel rotundatus, fulvo-ferrugineus, nitidus; capite antice creberrime punctulato, vertice spatio lævi; clypeo semicirculari, plano; thorace hic illic punctis magnis pauciter consperso, linea dorsali nulla; elytris grosse punctato-striatis (inter humerum et suturam striis 7).

♂. Vertex cornu valido conico acuto armatus. Thorax antice verticalis biretusus et supra obtuse 4-dentatus, dentibus duobus medianis a laterali utrinque spatio depresso separatis.

♀. Vertex transversim carinulatus, carina breviter trituberculata; thorax medio antice carina acuta leviter biarcuata.

Long. 7–9 millim. ♂ ♀.

Hab. Mexico, Cordova, Toxpam, Playa Vicente (*Sallé*), Colima city (*Höge*); Nicaragua, Chontales (*Belt*, *Janson*).

Possibly not distinct from the Colombian *B. modestus*, Casteln.; but the describer makes no mention of the arcuated or semicircular clypeus, the fine anterior margin of which is conterminous or nearly so with the edge of the epistome. His description is taken from the female, and the sculpture of the fore part of the head and elytra applies fairly well to the female of the present species, with the exception of the "corselet criblé de gros points" and the impressed dorsal line.

We figure a male example from Chontales.

GEOTRUPES.

Geotrupes, Latreille, Précis des caract. gén. des Ins. p. 6 (1796); Erichson, Ins. Deutschl. iii. 1, p. 723; Jekel, Ann. Soc. Ent. Fr. 1865, p. 513; Horn, Trans. Am. Ent. Soc. 1880, p. 145.

More than a hundred species are known of this familiar genus, so eminently characteristic of the Insect Faunas of the north temperate zone of both hemispheres. It passes into the northern tropical zone both in America and in Eastern Asia; but it is doubtful if it is found so far south as Celebes, as recorded in the distribution of certain Japanese species. The locality "Peru" found by M. Jekel to be attached to specimens in Mr. Saunders's collection appears to have been erroneous, the insects being Mexican; and a species (*G. lateridens*) recorded as from Chili proves to be European (*C. subarmatus*).

1. **Geotrupes fronticornis.** (Tab. VII. figg. 11, ♂; 11 *a*, side view of head and thorax.)

Geotrupes fronticornis, Erichs. Ins. Deutschl. iii. 1, p. 727 [1].

Geotrupes (*Ceratotrupes*) *fronticornis*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 541 [2].

Hab. Mexico [1 2], Toluca, Juquila (*Sallé*), near the city (*Flohr*).

2. **Geotrupes sturmi.** (Tab. VII. figg. 12, ♂; 12 *a*, side view of head and thorax.)

Geotrupes (*Ceratotrupes*) *sturmii*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 543 [1].

Hab. Mexico [1], Juquila (*Sallé*).

The typical specimen in the Sallé collection, a male of minor development, differs much in the form of the thorax from corresponding individuals of *G. fronticornis*: this part is very much broader, chiefly owing to the explanated lateral margins; from the subangular dilatation in the middle it is greatly narrowed nearly in a straight line to the anterior angles, and less, but still considerably, narrowed to the hind angles.

The other characters mentioned by Jekel—the blue colour, the interrupted basal margin of the thorax, and the deeper and broader elytral striæ—are found in indubitable examples of *G. fronticornis*.

3. Geotrupes mniszechi. (Tab. VII. figg. 13, ♂; 13 *a*, side view of head and thorax.)

Geotrupes (*Ceratotrupes*) *mniszechi*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 544[1].

♂ *major*? Capitis cornu quam in *G. fronticorni*, sed multo longiore, antice oblique porrecto apice recurvo, supra sulcato ruguloso-punctulato. Thoracis cornu multo angustior et longior, apice sat profunde fissum. Corpus breviter quadrato-ovatum, cyaneum.

Hab. Mexico[1] (*Sallé*). One example.

From the description given by Jekel of the general form[1] (taken from a single example, a ♂ minor from the Mniszech collection), the shape of the thoracic protuberance, and the outline of the thorax, I think there is good reason to conclude that the specimen above described belongs to the same species, which is thoroughly distinct from *G. fronticornis*.

4. Geotrupes sallæi. (Tab. VII. fig. 14, ♂.)

Geotrupes (*Cnemotrupes*) *sallei*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 596[1].
Geotrupes (*Cnemotrupes*) *sallei*, var. *falsus*, Jekel, loc. cit. p. 598.

Hab. Mexico, Oaxaca[1], Duraznal (*Sallé*).

On examining the type of *G. falsus*, kindly lent by Dr. Sharp (the possessor of the Saundersian collection of Lamellicornia), I find it to differ from the few examples we have of *G. sallæi* exactly as stated by M. Jekel; but the differences are evidently only individual, and the specimen is doubtless from Mexico, and not from Peru, as labelled.

5. Geotrupes viridi-obscurus.

Geotrupes (*Cnemotrupes*) *viridi-obscurus*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 599[1].
Geotrupes (*Cnemotrupes*) *saundersii*, Jekel, loc. cit. p. 598[2].

Hab. Mexico, Orizaba, Parada, Duraznal (*Sallé*), Oaxaca (*Sallé*, *Höge*), Salazar (*Höge*), Mochitlan (*Baron*).

M. Jekel was right in doubting[2] that the specimen on which he founded his *G. saundersii* came from Peru. It is a female differing in nothing but trifling individual peculiarities from Mexican specimens of *G. viridi-obscurus* of the same sex. The chief difference adduced by the describer, viz. the fuliginous antennal club, is due simply to a coating of dirt on that organ. Dr. Sharp informs me that there are other instances of specimens inadvertently labelled Peru instead of Mexico in the Saundersian collection.

6. Geotrupes rufo-clavatus.

Geotrupes (*Cnemotrupes*) *rufo-clavatus*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 601[1].

Hab. Mexico (*Chevrolat*[1]).

No *Geotrupes* in the Sallé or Höge collections answers to Jekel's description of the above species, especially as regards the shallow elytral striæ and their mode of punctuation.

7. Geotrupes sobrinus.

Geotrupes (*Cnemotrupes*) *sobrinus*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 602[1].

Hab. Mexico[1], Jacale (*Sallé*).

I have only seen three examples (including the pair described by Jekel from the Sallé collection) of this species.

8. Geotrupes herbeus. (Tab. VII. fig. 15, ♂.)

Geotrupes (*Cnemotrupes*) *herbeus*, Jekel, Ann. Soc. Ent. Fr. 1865, p. 604[1].

Hab. Mexico (*Sallé, ex coll. Sturm*[1]), Las Vigas, Jalapa, Salazar (*Höge*).

I class under this species numerous examples of a form smaller and relatively shorter than *G. viridi-obscurus*, and distinguished further by the black antennal club. The male does not differ from that of *G. viridi-obscurus* in the teeth of the under surface of the fore tibiæ.

9. Geotrupes guatemalensis. (Tab. VII. figg. 16, ♂; 16 *a*, side view of head and thorax.)

Oblongo-ovatus, mediocriter elongatus, viridi-cyaneus, nitidus, subtus fusco-nigro hirsutus; clypeo sat elongato subacuminato, dense ruguloso-punctato, tuberculo quam in *G. viridi-obscuro* altiore; antennis piceo-rufis, clava fulva; thorace lævi, linea dorsali obsoleta, lateribus tantum punctatis, basi medio late immarginata, utrinque sinuata, margine laterali angusto; scutello lævi, medio longitudinaliter vage impresso; elytris profunde striatis, striis leviter crenato-punctatis, interstitiis convexis.

♂. Tibiæ anticæ extus 6-dentatæ, dente apicali sicut in ♀ simplici, cæteris gradatim minoribus; subtus antice dente magno postice dentibus minoribus 1–3; coxæ dente grosse armatæ. Femora postica subtus dente lato brevi; tibiæ extus 4-carinatæ.

Long. 13–20 millim.

Hab. Mexico, Chiapas (*Sallé*); Guatemala, Totonicapam 8000 to 10,500 feet (*Champion*).

A large number of examples were captured by Mr. Champion, offering little or no difference except in size. From Chiapas there is only a single example, apparently a much-worn female, though presenting a distinct anterior tooth on the underside of the anterior tibiæ.

G. guatemalensis belongs to Jekel's subgenus *Phelotrupes*, which, in his Monograph, contains only Indian and Japanese species.

10. **Geotrupes onitidipes.** (Tab. VII. fig. 17, ♂.)

Geotrupes onitidipes (Candèze, MS.).

Breviter ovatus, nigro-æneus, nitidus, subtus cum pedibus cyaneus, nigro hirsutus; clypeo triangulari apice obtuso, dense confluenter punctato tuberculoque obtusissime parum elevato, vertice lævi; antennis piceo-nigris; thorace a basi usque ad apicem paullo arcuatim angustato, lateribus solum punctato, linea dorsali obsoleta, basi subtilissime marginata; scutello lato, lævi; elytris brevibus, profunde striatis, striis dorsalibus fere lævibus, lateralibus (minus exaratis) punctatis, interstitiis dorsalibus valde convexis.

♂. Tibiæ anticæ valde elongatæ, graciles, extus dentibus 5–6 distantibus, apicali bifido ramo interiore longissimo; subtus denticulis 3–4 parvis.

♀. Tibiæ anticæ normales.

Long. 13–16 millim.

Hab. Guatemala (*Rodriguez, in colls. Sallé and Bates*), Capetillo (*Champion*).

I cannot find that Dr. Candèze ever described this singular species, which he distributed to his correspondents many years ago under the name I have adopted. Mr. Champion met with one example only, a small male. As the middle leaflet of the antennal club is entire round its edge, and the apical tooth of the male anterior tibiæ is broad and bifid, though to an exaggerated degree, the species, I presume, would belong to Jekel's subgenus *Cnemotrupes*.

11. **Geotrupes cavicollis.** (Tab. VII. figg. 18, ♂; 18 *a*, side view of head and thorax.)

Elongato-oblongus, niger, nitidus, subtus nigro hirsutus; antennis rufo-piceis, clava fulva; clypeo late triangulari, apice acuminato-reflexo, tuberculo magno conico antice carinato armato, genis angulatis et prope suturam clypealem acute dentatis; thorace transverso, lateribus tantum sparse punctato, linea dorsali postice impressa et punctata, basi marginata et utrinque arcuatim emarginata, medio prope marginem anticum fovea transversa sat profunda antice carina marginali delimitata; elytris haud profunde punctulato-striatis, interstitiis parum convexis.

♂. Tibiæ anticæ extus dentibus normalibus duobus deinde longo intervallo denticulis 2–3, subtus dente vel spina valida armatæ. Femora postica subtus integra.

♀. Tibiæ anticæ extus 6–7-dentatæ, subtus inermes.

Long. 20 millim. ♂.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer, Höge*).

The middle leaflet of the antennal club has part of its edge emarginated; the species therefore belongs to Jekel's Division II. It is apparently allied to the European *G.* (*Canthotrupes*) *douei*, Gory, the margin of the genæ, or "canthus ocularis," being bidentate in the same places as in that species, though the prominences are not nearly so large. The mandibles also do not present the extraordinary form they have in *G. douei*. I assume that the two examples examined are males.

12. **Geotrupes ——?**

Hab. Mexico, Refugio in Durango (*Höge*).

A single damaged specimen of an apparently distinct species of the section *Cnemotrupes*.

Fam. TROGIDÆ.

TROX.

Trox, Fabricius, Syst. Ent. p. 31 (1775); Harold, Monogr. in Col. Hefte, ix. p. 1 (1872).

M. Preudhomme de Borre enumerates 119 species of this almost universally distributed genus in his monograph 'Catalogue des Trogides,' recently published. The genus is only moderately well represented in Central America.

1. Trox scutellaris.

Trox scutellaris, Say, Journ. Acad. Phil. iii. p. 238 (1823)[1]; Complete Writings, ii. p. 140; Harold, Col. Hefte, ix. p. 56[2].

Omorgus scutellaris, Lec. Proc. Ac. Phil. vii. p. 214[3]; Col. of Kansas and Eastern New Mexico, t. 1. f. 4.

Hab. North America, Missouri[1] to Texas[2], Kansas[2 3], New Mexico[2 3].—Mexico (*Sallé*), Monclova in Coahuila (*Dr. Palmer*), Durango city, Chihuahua city, Villa Lerdo (*Höge*), Cuernavaca[2].

2. Trox monachus.

Trox monachus, Herbst, Natursyst. bekammt. ausl. Ins., Käf. iii. p. 25, t. 21. f. 7; Harold, Col. Hefte, ix. p. 116[1].

Hab. North America[1], Southern States.—Mexico (*Sallé*).

3. Trox punctatus.

Trox punctatus, Germar, Ins. Sp. Nov. p. 113 (1824); Harold, Col. Hefte, ix. p. 124[1].

Var. *Omorgus tesselatus*, Lec. Proc. Ac. Phil. vii. p. 216 (1854)[2].

Trox tessellatus, Harold, loc. cit. p. 124[3].

Hab. North America, Southern States[1], Mexican boundary[2].—Mexico, Sonora[1], Nuevo Laredo, Chihuahua city, Villa Lerdo, Guanajuato city, Monterey (*Höge*).

All the numerous Mexican examples belong to the form *T. tessellatus*, (Lec.), which Von Harold considers[3] to be a variety of *T. punctatus*, though the rows of polished tubercles on all the elytral interstices give it a distinct character. The sculpture of the thorax and elytra is almost exactly as in *T. scutellaris*, from which its oblong form and large humeral callus distinguish it.

4. Trox asper.

Omorgus asper, Lec. Proc. Ac. Phil. vii. p. 215 (1854)[1].

Trox asper, Harold, Col. Hefte, ix. p. 118[2].

Hab. North America, Southern States[1 2].—Mexico[2], Northern Sonora (*Morrison*), Presidio (*Forrer*).

5. **Trox suberosus.**

Trox suberosus, Fabr. Syst. Ent. p. 31 (1775); Harold, Col. Hefte, ix. p. 119 [1].
Trox crenatus, Oliv. Ent. i. 4, p. 7, t. 1. f. 4 (1789); Chevr. Ann. Soc. Ent. Fr. 1864, p. 416 [2].
Trox alternatus, Say, Bost. Journ. Nat. Hist. i. p. 179 (1835) [3]; Complete Writings, ii. p. 652.
Omorgus punctatus, Lec. Proc. Ac. Phil. vii. p. 215 (1854) [4].
Trox nobilis, Woll. Col. Hesperidum, p. 93 (1867) [5].

Hab. North America [1 2 3 4].—Mexico [1 2], Northern Sonora (*Morrison*), San Pedro in Coahuila, Guajuco in Nuevo Leon, San Luis Potosi (*Dr. Palmer*), Tres Marias Islands (*Forrer*), Cordova, Guanajuato, Tuxtla (*Sallé*), Matamoros Izucar, Chilpancingo, Aguas Calientes, Chihuahua city, Ventanas, Villa Lerdo, Acapulco, Durango city, Jalapa, San Juan Bautista, Vera Cruz, Tapachula (*Höge*), Acapulco (*J. J. Walker*); Nicaragua, Chontales (*Belt*).—South America [2] to Patagonia [1]; Antilles [2]; Africa; Cape Verde Islands [5].

I have copied the chief synonymy of this widely spread and common insect from Von Harold's Monograph, in which the species and its varieties are fully described. Morrison's examples from Northern Sonora are all of large size, the "var. *a*" of Von Harold.

6. **Trox acanthinus.** (Tab. VII. fig. 19.)

Trox acanthinus, Harold, Col. Hefte, ix. p. 154 [1].

Hab. Mexico [1], San Andres Chalchicomula (*Sallé*).

7. **Trox lecontei.**

Trox lecontei, Harold, Col. Hefte, ix. p. 156 [1].

Hab. North America, Southern States [1].—Mexico [1], Puebla (*Sallé*), Jalapa (*Höge*).

8. **Trox sonoræ.**

Trox sonoræ, Lec. Proc. Ac. Phil. 1854, p. 211 [1].
Trox alternans, Lec. loc. cit. p. 211 (nom. præocc.) [2].
Trox lecontei, var., Harold, Col. Hefte, ix. pp. 157, 158 [3].

Hab. North America, Kansas and New Mexico [2].—Mexico, Sonora [1].

It is on Dr. Horn's authority that *T. alternans* is referred, above, to *T. sonoræ* as a synonym. According to Von Harold [3] it is only a large and strongly-sculptured form of *T. lecontei*.

ANAIDES.

Anaides, Westwood, Trans. Ent. Soc. Lond. iv. p. 167 (1845); Erichson, Ins. Deutschl. i. 3, p. 924.

A genus confined to Tropical America. Two species only have been previously described.

1. **Anaides laticollis.**

Anaides laticollis, Harold, Ann. Soc. Ent. Fr. 1863, p. 175 [1].

Hab. Mexico, Cordova [1], Toxpam (*Sallé*), Jalapa (*Höge*); Guatemala, Capetillo, San Gerónimo, Coban, San Joaquin in Vera Paz (*Champion*).

This species is found at the sap of various trees, according to Mr. Champion.

2. **Anaides simplicicollis.** (Tab. VII. fig. 20.)

A. fossulato et *A. laticolli* similis, sed differt thorace haud carinato. Niger, nitidus, supra fere nudus, capitis et thoracis elytrorumque (basi) marginibus solum ciliatis; capite fere ovato, discrete punctato, obtuse carinato; thorace sat dense punctato, basi utrinque valde sinuata, dorso paullo convexo et postice vage late sulcato; elytris elongatis, dorso planatis, lateribus verticalibus et supra declivitatem carinatis (carina longe ante apicem in callum desinente) acute striatis, striis catenato-punctulatis, interstitiis planis sparsim punctulatis et subtiliter unistriatis; tibiis 4 posticis gradatim sat fortiter dilatatis triquetro-compressis ciliatis extus haud serratis; tibiis anticis extus dentibus acutis 3 et supra serrulatis.

Long. 10 millim.

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet, Rio Sucio (*Rogers*).

Taken abundantly by Mr. Rogers. The mentum differs from that of *A. fossulatus*, as figured by Westwood, in being rather deeply sinuated at the apex.

CLŒOTUS.

Clœotus, Germar, Zeitschr. für Entom. iv. p. 129 (1843) (partim); Harold, Col. Hefte, xii. p. 42; Preudhomme de Borre, Catal. des Trogides, p. 12 (1886).

Acanthocerus, Germar, loc. cit. p. 131 (nec Macleay).

M. Preudhomme de Borre enumerates, in his 'Catalogue des Trogides,' twenty-six species as belonging to this genus. With one exception (a species from Penang) they are all from America, where they are spread over the temperate and tropical zones from the United States to Chili.

Von Harold in his Col. Hefte, xii. p. 28, enters fully into the reasons which induced him to change the name given to this genus by Germar in his monograph of the group. The characters given by Macleay of his genus *Acanthocerus*, although containing some errors, leave no reasonable doubt that he had in view the same generic form as that on which Germar constituted his *Sphæromorphus*. The inconvenience attending this displacement of names is perhaps lessened by Von Harold having retained the name *Clœotus* for both Germar's genera *Clœotus* and *Acanthocerus* (nec Macleay), which appear to offer no essential difference.

The sphærical Trogidæ are generally found by beating bushes containing dead twigs, from which they readily drop in the coiled-up state, sometimes in considerable numbers, into the inverted umbrella. It was in this way that Mr. Champion obtained his extensive series of the group. They feed on dead fungoid matter and galls. I

have seen *Clœotus plicatus* and another species feeding on old woody boleti, and a species of the same genus on gall-like excrescences on the midrib of a *Paullinia* leaf.

1. Clœotus globosus.

Trox globosus, Say, Boston Journ. Nat. Hist. i. p. 179 (1835)[1]; Complete Writings, ii. p. 653.
Acanthocerus globosus, Germ. Zeitschr. für Ent. iv. p. 138[2].

Hab. North America[1 2].—Mexico[2], Cordova (*Sallé*), Jalapa (*Höge*).

Var. *C.* (*A.*) *macleayi*, Perty, Del. An. Art. Brasil. p. 43, t. 9. f. 4[3]; Germar, Zeitschr. für Ent. iv. p. 139[4]. Elytrorum carina submarginali valde crenata subinterrupta; thorax acervatim punctatus.

Hab. Guatemala, Cerro Zunil, El Tumbador, Zapote, San Juan in Vera Paz, Tamahu (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*). — South America, Colombia[4], Brazil[3 4].

Var. *C.* (*A.*) *sticticus*, Erichs. in Germar, Zeitschr. für Ent. iv. p. 140[5]; *A. antiquus*, Erichs. loc. cit. p. 141[6]. Thorax parcius et subtilius punctatus.

Hab. Nicaragua, Chontales (*Belt*, *Janson*). — South America, Surinam[5], Pará[6], Amazons (*coll. Bates*).

On examination of a large series from various localities this species proves to vary in all those points of colour, bloom of surface, and sculpture on which Germar and Erichson relied in separating it into five, for I see nothing in the description of Erichson's *A. puncticollis* from South Brazil to merit its specific separation from the rest. The character derived from the carinated interstices of the elytra towards the apex seems to be a little more constant than the sculpture of the head and thorax, which is variable among examples from one and the same locality. In nearly all the northern specimens the longer exterior carina is sharp and clear of indentations. This is the chief distinguishing feature in Germar's description of *C. globosus*. I find it more pronounced in the Jalapa examples captured by Höge than in specimens of the typical *C. globosus* from Louisiana. The Cordova specimens in the Sallé collection are somewhat different, and show a tendency towards *C. sticticus* and *C. macleayi* in the laterally crenated and wavy line of the same carina. Guatemala examples all show a more or less wavy carina, and in those from Chiriqui this feature is generally a little more pronounced; but I find that it varies even in South-Brazilian examples of *C. macleayi*. Thus it must be held doubtful if the five species of Germar's Monograph can be maintained even as constant local varieties. Further material from South-American localities is required to decide the question.

2. Clœotus aphodioides.

Melolontha aphodioides, Illiger, in Wiedem. Archiv für Zool. und Zoot. i. 2, p. 109[1].
Acanthocerus aphodioides, Germar, Zeitschr. für Ent. iv. p. 137[2].
Scarabæus latipes, Germar, Ins. Spec. Nov. p. 114[3].

Trox splendidus, Say, Boston Journ. Nat. Hist. i. p. 180 (1835)[4]; Complete Writings, ii. p. 653.
Acanthocerus lævistriatus, Casteln. Hist. Nat. Ins. Col. ii. p. 109[5].

Hab. North America, United States[1 2 4].—Mexico[3 5].

Var. *C. prionomus.* A typo differt solum elytrorum margine prope humeros serrulato.

Hab. Guatemala, Zapote (*Champion*).

The variety, of which three examples only were taken by Mr. Champion in Guatemala, agrees precisely with North-American specimens of *C. aphodioides* in its oblong form and in the sculpture of its surface; the sides of the thorax have three similar polished elevations, and the apex of the elytra six carinæ, viz. three parallel to the suture, and three to the lateral margin, the broad sulci between the latter being marked with fine chain striæ in elegant pattern. In the variety the elytra have subrectangular shoulders, and a very narrowly dilated margin, which for a short space near the shoulder is conspicuously, though finely, serrated. The colour of the elytra is brilliant brassy, almost golden, and the underside of the body wit h the femora is reddish.

3. Clœotus reticularis.

C. aphodioidi affinis; differt thorace lateribus absque callis politis, scutello lævi, elytris subtilius striato-punctatis, etc.
Long. 4 millim.*

Hab. Mexico, Cordova (*Sallé*).

Of the same oblong form as *C. aphodioides*; brassy-black, with greenish-bronze and æneous reflections, the surface polished and with a changing milky-opaline lustre. Head (vertex excepted) closely punctured; clypeus broadly rounded, the edges reflexed; genæ triangular, sublobate. Thorax transverse, quadrate, slightly narrowed anteriorly, the sides nearly straight, the hind angles rectangular, submarginal impressed line entire, near the anterior angles broader, its inner edges raised and thickened; surface finely and not very closely punctured, becoming nearly smooth behind, the lateral border having a large oblong depression, thickly and finely flexuous-strigose, and without polished elevations. Scutellum smooth, at the base a very few punctures, and within the apex a shallow punctured fovea. Elytra with rows of short linear punctures not impressed in striæ, the lateral margin near the shoulder with 3 or 4 serrated denticulations, the apex as in *A. aphodioides* with six carinæ, the interstice 2 (from the suture) being carinated to the apex, the interstices 3 and 4 having very short carinæ, and 6, 9, and 11 having carinæ successively increasing in length, the broad sulci between the three having fine wavy striæ forming a chain-like pattern. Possibly only an extreme variety of *C. aphodioides.*

* Measurements of this genus and *Acanthocerus* are of the insects in their rolled-up condition.

4. Clœotus plicatus.

Acanthocerus plicatus, Erichs. in Germ. Zeitschr. für Ent. iv. p. 143[1].

Hab. Guatemala, Zapote, Panzos (*Champion*).—South America, Pará[1], Amazons (*coll. Bates*).

The short, erect, subclavate bristles which clothe the surface of this species are sometimes wanting, probably from abrasion.

5. Clœotus infantulus.

Parvus, fere globularis, æneus, politus, interdum fulvo translucens; capite sat dense punctato, clypeo late rotundato, margine prope genas leviter sinuato, genis haud lobatis; thorace angulis posticis valde obtusis, integriter marginato, lineolis curvatis haud profundis sat dense impressis, callis quatuor politissimis; scutello lævi, basi tantum sparsim punctulato; elytris rotundatis, margine versus humeros serrato, subtiliter striato-punctatis, punctis elongatis, stria suturali versus apicem sulciformi, ibique interstitiis tribus alternis obtuse carinatis, carina exteriore fere usque ad humeros extensa; tibiis posticis extus longitudinaliter dense striatis, apice extus productis.

Long. 2–2½ millim.

Hab. Guatemala, Zapote (*Champion*). A large series of examples.

Var. Saturate olivaceo-æneus sculpturaque paullo grossiore.

Hab. Guatemala, Cerro Zunil, Las Mercedes, Zapote, Capetillo (*Champion*).

Distinguished by the apical area of the elytra being marked by three long carinæ. The humeral callus is very prominent, and there is an elongated polished callus along the dilated lateral margin.

6. Clœotus sinuatus. (Tab. VII. figg. 21 ; 21 *a*, profile of unextended specimen.)

Rotundatus, politus, nigro-æneus, saturate æneus, æneo-cupreus vel læte rufo-cupreus; clypeo obtuse rotundato, apice depresso et plus minusve emarginato; thorace angulis posticis distinctis, sed apice plus minusve rotundatis; scutello basi (rarissime postice) punctato; elytris usque ad basin striato-punctatis, punctis parum elongatis, margine prope humeros subtiliter serratis, apice depressis multituberculatis ibique interstitio 2° bi- vel tri-tuberculato (tuberculis raro connexis), carina submarginali elongata acuta apice hamata (in var. *C. sejuncto* simplici), carinula brevi apud interstitium 10^{m}; tibiis posticis extus longitudinaliter strigosis, apice plerumque lævibus vel dimidio apicali lævi punctato.

Long. 4 millim.

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, Las Mercedes, Cerro Zunil, Capetillo, Calderas, Dueñas, Senahu, San Juan in Vera Paz (*Champion*).

This apparently common Central-American species varies much in colour and sculpture both of surface and of the flattened outer side of the posterior tibiæ, and rather less so in the tuberculation of the apical area of the elytra. In all its varieties it is distinguished by the broad, but very shallow, sinuation of the clypeus. As to colour-variation, the brilliant red-coppery examples seem to be almost confined to

Mexico, where dark-bronzed hues are the exception, whilst the reverse is the case in Guatemala, where at Capetillo, judging from the very numerous specimens taken, bronze-black is the general colour; Capetillo examples are, moreover, distinguished from the Mexican form, with very few exceptions, by the striæ of the outer side of the posterior tibiæ being much abbreviated, leaving a large apical space smooth or sparingly punctured; but there are all gradations in the extent of the smooth space. At Cerro Zunil the prevailing colour is again different, the elytra being very dark greenish-bronze, nearly black, and the head and thorax dark coppery; this form, which I propose to call *C. sejunctus*, is also distinguished, but not quite in all the examples, by a slight peculiarity of sculpture at the elytral apex, the acute submarginal carina not being hooked behind, and also by the finer punctuation of the whole surface. As to the general punctuation, it varies greatly both in strength and density, as in most of the species of the genus, but the variation in this respect does not correspond with other differential characters.

The sculpture and tuberculation of the apical area of the elytra consists (1) in an oblique row of about five oblong tubercles preceding an apical depression, the outermost of which is a short, but sharp, carina on the tenth interstice, (2) in a long submarginal carina (on the twelfth interstice) sharply hooked at its apex, (3) in a series of two or three tubercles, sometimes oblong, sometimes conical, and sometimes connected as a wavy carina, on the apical part of the second interstice (*i. e.* the one following the sulciform sutural stria), and (4) in a variable number of small rounded warts on the intermediate space. This apical space is otherwise scored with sharp striæ, the interstices of which are flat and smooth.

7. Clœotus strigilateris.

Parvus, *C. infantulo* similis, sed differt elytris apice multituberculatis. Nigro-æneus vel læte æneus, politus; capite punctato, vertice lævi, fronte media tuberculato, clypeo leviter sinuato; thorace subtiliter (intra latera grossius) punctulato; scutello basi punctulato; elytris subtilissime striato-punctatis, callo humerali vix prominente calloque elongato apud marginem dilatatum, carina submarginali valde elongata alta et verticaliter flexuosa, carina apud interstitium 10^{m} acuta, area apicali 4- vel 5- tuberculata, interstitio 2^{o} interrupto, lateribus inter interstitium et marginem multistriatis; tibiis posticis triangulariter dilatatis, apice extus valde productis, compressis, extus irregulariter grosse insculptis.

Long. 3 millim.

Hab. Mexico, Cordova (*Sallé*).

The numerous strongly elevated carinæ and tubercles of the apical area of the elytra distinguish this species from *C. infantulus* and *C. excisus*, the latter having the usual carinæ very faintly elevated, and the former three continuous carinæ, and being further distinguished by the entire rounded edge of the clypeus. In one of the two examples the apex of the hindmost tibiæ is very widely and strongly emarginated, and the inner angle (which carries one of the spurs) is very much shorter than the outer; in the other specimen the two spurs are nearly on the same level. The apical cross section

of the tibiæ is narrow-oblong, and subacuminated at the upper (outer) end. The hind tibiæ are much more triangular and broader at the apex than in *C. infantulus*.

8. **Clœotus excisus.**

Parvus, rotundus, nigro- vel piceo-æneus, politus; capite thoraceque lævibus, hoc lateribus tantum subtiliter punctatis, angulis posticis rotundatis; clypeo apice emarginato et leviter bidentato; scutello lævi (interdum basi punctulato); elytris lineatim subtiliter punctulatis, apice haud tuberculatis, stria suturali apice sulciformi, interstitiis 1° et 2° valde convexis, lævibus; tibiis posticis longitudinaliter striatis, nitidis, apice mediocriter prolongatis, truncatura anguste ovata.

Long. vix 3 millim.

Hab. GUATEMALA, Senahu (*Champion*). About a score examples.

Var. Capite thoracis disco scutelloque basi punctulatis.

Hab. MEXICO, Cordova (*Sallé*).

Similar in form and closely allied to *C. sinuatus*, var. *sejunctus*; but much smaller, and distinguished by its perfectly smooth and polished head, disc of thorax, and scutellum, as well as by the absence of distinct tubercles from the apex of the elytra. The apex of the clypeus is distinctly emarginated, and a small broad tooth is perceptible on each side of the emargination. The thorax is finely margined throughout, the hind angles imperceptible, and the flattened sides marked pretty uniformly with fine curved scratches. The elytra have the long submarginal carina and the short inner carina on the tenth interstice fine and very little elevated; there is no tubercle or carina in the apical area, the sutural stria is deep and broad, and the interstices on each side are equally elevated, straight, and smooth; the margin near the base is finely serrated. The hindmost tibiæ are moderately prolonged at the apex, and their outer surface is marked with a few longitudinal striæ; the apical truncation is rather narrow.

The var. from Mexico agrees precisely with the numerous Senahu examples, except in the fine punctuation of the head, thorax, and base of the scutellum.

9. **Clœotus bidens.** (Tab. VII. fig. 22.)

Rotundatus, æneus, politissimus; capite subsparsim punctato, clypeo late triangulari apice paullo producto, anguste emarginato et breviter bidentato, cætero margine flexuoso; thorace sparsissime, intra latera grossius et arcuatim, punctulato, integriter marginato, stria a margine antico passim distante, angulis posticis rotundatis; scutello lævi; elytris a humeris gradatim sed late ampliatis, margine ampliato convexo, striato-punctatis, stria suturali versus apicem sulciformi ibique interstitiis utrinque convexis et rectis, area apicali alternatim carinata, carina submarginali antice abbreviata; tibiis posticis extus suboblique strigosis, apice productis et compressis.

Long. 3–4½ millim.

Hab. PANAMA, Bugaba (*Champion*).—SOUTH AMERICA, Amazons.

Distinguished from the numerous allied species of similar form and colour by the shape of the clypeus, its flexuous margin, and slightly bidentate apex. The sculpture of the apex of the elytra resembles that of the much smaller *C. excisus* in the straight

and smooth convex interstices on each side of the sutural sulcus; in *C. bidens*, however, it differs from that species in having two carinated interstices (one of which is the usually short carina of the tenth interstice, which is here prolonged to the apex) between the convex interstices and the long submarginal carina. The apex of the hindmost tibiæ is more compressed than in the allied species, and the apical truncature forms a narrow oblong, thus approaching the *Acanthoceri*.

Mr. Champion obtained a large number of specimens at Bugaba. Three examples from Pará in my own collection offer no difference.

10. Clœotus nasutus.

C. bidenti affinissimus; differt colore saturate viridi-æneus vel nigro-æneus; capite crebre punctulato, vertice et tuberculo obtuso frontali lævibus; clypeo medio producto, breviter bidentato, margine leviter flexuoso, genis anguste sublobatis; thorace fere lævi, lateribus solum parce punctato, omnino marginato; scutello sparsim grosse punctato; elytris subtilissime striato-punctatis, apice absque tuberculis, breviter impresso-striatis, stria suturali profunda integra, carinula ordinaria obtusa, carina exteriore antice abbreviata; tibiis posticis extus parce longitudinaliter striatis, apice lævibus.

Long. $2\frac{3}{4}$ millim.

Hab. Mexico, Atlisco and Matamoros in Puebla, Iguala in Guerrero (*Höge*).

Sufficiently distinct from the southern *C. bidens* by the smooth apex of the posterior tibiæ, as well as by its dark brassy-green colour.

11. Clœotus metallicus.

Clœotus metallicus, Harold, Col. Hefte, xii. p. 45 [1].

Hab. Costa Rica, Volcan de Irazu (*Rogers*); Panama, Bugaba (*Champion*).—South America, Colombia [1], Upper Amazons [1].

One example only was obtained by Mr. Champion at Bugaba, differing in its smaller size and feebler sculpture from the typical form from the Amazons. The example from Irazu is more characteristic. The species differs from *C. bidens* in the simply angulated and smooth clypeus, the more distinct hind angles of the thorax, and the smooth external face of the hind tibiæ. The sculpture of the apex of the elytra is nearly the same.

12. Clœotus viridipennis.

C. metallico et *C. nitenti* (Guér.) proxime affinis, tibiis posticis extus lævibus. Cupreo-nitidus rufo translucidus, elytris viridi-æneis; capite (clypei margine excepto) arcuato-punctato, media fronte tuberculo rotundato lævi; clypeo obtusissime triangulari, marginibus, apice excepto, reflexis; thorace arcuato-punctato, spatiis lævibus, angulis posticis apice rotundatis; scutello lævi; elytris fere usque ad basin striato-punctatis, stria suturali versus apicem sulciformi, interstitio 2° convexo, medio interrupto, carinis apud interstitia 10^{m} et 12^{m} (submarginalem) elongatis acutis, medio apice tuberculis 3 vel 4 elongatis; tibiis posticis extus lævibus, truncatura latissima.

Long. 5 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Mr. Champion obtained a large number of specimens, all conformable to the above

description. This species differs from the South-American *C. nitens* (Guér. & Germ.) chiefly in the stronger sculpture. The frontal tubercle is always round and perfectly isolated.

13. Clœotus nitens.

Acanthocerus nitens, Guérin, Rev. Zool. 1839, p. 299; Germar, Zeitschr. für Ent. iv. p. 136[1].

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Cerro Zunil, San Isidro (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Bugaba (*Champion*). — South America, Brazil[1].

Central-American specimens vary a little in the punctuation of the head, and in the form of the apical angle of the clypeus, the angle being sometimes entire, and sometimes slightly notched; but these differences do not correspond with the variations that exist in the strength of the punctures of the elytra, which, according to Germar, also varies much in Brazilian examples. Examples with triangular clypeus and punctured head with round polished frontal tubercle agree in these respects exactly with *C. viridipennis*, from which *C. nitens* in all its varieties differs in the sculpture of the apical part of the elytra. In the latter the elytra have their apical portion entirely free from tubercles and sharp carinæ; and the interstices are mostly broad and slightly convex, and separated by single, sharp striæ, which become longer from the sutural region towards the lateral margin. *C. nitens* is also a larger insect than *C. viridipennis*.

14. Clœotus —— ?

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*).

A single example of a species allied to *C. nitens* and *C. viridipennis* is in too damaged a condition to be determined.

15. Clœotus viridulus.

Parvus, globosus, politus, læte viridi-æneus, subtus rufo-piceus; capite plagiatim punctato; clypeo subtriangulari, a fronte linea obtusissime elevata separato, margine reflexo, rufo; thorace sat grosse plagiatim punctato, angulis posticis obtusissimis; scutello grosse sparsim punctato; elytris striato-punctatis (punctis oblongis), prope apicem stria suturali sulciformi, interstitio 2° late lævi, striis brevibus, sex interstitiis planis, carinula brevi obtusa apud 10^{m} altera acutiore elongata submarginali; tibiis posticis extus longitudinaliter striatis, apicis truncatura late rotundata.

Long. 3½ millim.

Hab. Mexico, Misantla (*Höge*). Two examples.

Similar in size and sculpture of the apical area of the elytra to *C. excisus*, but readily distinguishable by the broad apical truncature of the hind tibiæ. The thorax and scutellum have a peculiar strong, but sparse, punctuation; and the clypeus, though obtusely angular or subproduced at the apex, shows no signs of emargination, the margin being reflexed and entire.

16. Clœotus viridis.

Clœotus viridis, Lansberge, Notes from the Leyden Mus. ix. p. 203 (April 1887)[1].

Hab. Mexico [1].

According to the description this species is very similar in form, colour, and sculpture to *C. viridulus*; but the size ($2\frac{1}{2}$ millim.) is much less, and the phrase "bords latéraux (of the thorax) légèrement sinués," does not at all agree, neither can I reconcile the description of the apical sculpture of the elytra with *C. viridulus*.

ACANTHOCERUS.

Acanthocerus, Macleay, Horæ Entomol. i. p. 136 (1819); Harold, Col. Hefte, xii. p. 28; Preudhomme de Borre, Cat. des Trogides, pp. 11, 26.

Sphæromorphus, Germar, Zeitschr. für Entom. iv. p. 111 (1843); Lacordaire, Gen. Col. iii. p. 158.

Preudhomme de Borre enumerates twenty-eight species as belonging to this genus. Four are from Borneo and the neighbouring islands, the rest from America.

1. Acanthocerus eulampros. (Tab. VII. fig. 23.)

A. polito (Erichs.) affinis; splendidissime æneus, corpore subtus rufescente; clypeo basi, vertice scutelloque lateribus sparsim punctulatis; thorace stria antico-marginali medio anguste interrupta et versus angula margini approximata; elytris disco subtiliter striato-punctatis, apice lævi, stria marginali et suturali prope apicem impressis; tibiis posticis dichotome oblique striatis.

Long. 7 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Distinguished from *A. politus* by the finely punctured base of the clypeus, and the four or five abbreviated rows of small punctures on the disc of each elytron. The sutural row of punctures (which graduate into a deep stria towards the apex) does not reach the base of the elytra. The base of the thorax is rounded, and there is not the slightest trace of posterior angles, but the margin is slightly depressed on each side near the scutellum, and the inner side of the depression is slightly tumid. The lateral margin of the elytra in the place where the knees of the middle legs fit (in the rolled-up state) is arched and sinuated. A specimen from Chiriqui is figured.

2. Acanthocerus humeralis.

Sphæromorphus humeralis, Erichs. in Germar's Zeitschr. für Entom. iv. p. 116[1].

Hab. Panama, Bugaba (*Champion*).—South America, Para [1].

Two examples, differing from the type form in the more prominent tubercle on the outer side of the basal depression on each side of the thorax and the corresponding more prominent shoulders of the elytra, a difference probably sexual. Von Harold in

his remarks on the South-Brazilian *A sesquistriatus* (Col. Hefte, xii. p. 35) says that Erichson's type specimen of *A. humeralis* has a short submarginal elytral stria like *A. sesquistriatus*, *i. e.* a sharply incised stria. If this is really the case, the reference of the present species to *A. humeralis* is wrong. But I suspect Von Harold's is a mistaken observation. No mention is made of the short stria in Erichson's description, which otherwise (with the exception of the punctured apex of the scutellum) agrees with specimens taken by myself in the country from which his examples were derived.

3. **Acanthocerus relucens.** (Tab. VII. fig. 24.)

A. seriato (Erichs.) affinissimus; differt vertice et scutello lævibus elytrorumque interstitiis apicalibus alternis haud alte carinatis; saturate æneus, politissimus; clypeo antice subtiliter postice in fasciam sat grosse punctato; thorace lævi, margine basali utrinque prope scutellum depresso; scutello lævi; elytris disco striato-punctatis, striis antice et postice abbreviatis punctisque ovalibus parum impressis, apice striis profundis, suturali marginalique et sex brevibus intermediis quarum interstitiis alternis mediocriter elevatis; tibiis posticis extus punctis arcuatis separatis insculptis.

Long. $5\frac{1}{2}$ millim.

Hab. Guatemala, Las Mercedes, Cerro Zunil, San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

Var. *A. mexicanus.* Paullo minor ($4\frac{1}{2}$–5 millim.), elytrorum sulcis apicalibus vage crenato-punctatis, scutello magis punctato.

Hab. Mexico, Jalapa (*Höge*); British Honduras, Belize (*Blancaneaux*).

Sufficiently distinct from *A. seriatus* (Erichs.), a species of the Amazons valley, by the characters above mentioned. The depression of the hind margin of the thorax on each side of the scutellum is common to both species, and in some examples (♀?) has a distinct tubercle on the inner side; but the apical marginal stria is finer and nearer to the margin, though variable in this respect. The scutellum has a few punctures at the base on each side. The rows of shallow, oval punctures on the elytra are variable in strength and number; the sutural stria, which as usual is deeply impressed at the apex, becomes a similar row before the middle, and continues as such to the base; the six short sulci of the apex increase in length from the suture outwards, but the longest does not reach the middle, and the smooth interstices are alternately moderately elevated, not sharply and greatly raised as in *A. seriatus*. The hindmost tibiæ externally are marked with arcuated scratches, mostly isolated, and the scratches do not form a close reticulation as in *A. seriatus*. A Chiriqui specimen is figured.

4. **Acanthocerus vicarius.**

A. semipunctato (Germ.) proxime affinis et forsan ejus varietas geographica. Globularis, politus, saturate æneus, cupreo-æneus vel cupreus; thoracis stria marginali anteriore valida et integra, thorace et scutello punctatis; elytris sat regulariter et usque ad apicem striato-punctatis, striæ submarginalibus punctis prope apicem interdum conjunctis; tibiis posticis strigulis arcuatis insculptis.

Long. $3\frac{1}{2}$–4 millim.

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, Cubilguitz, Senahu, Cerro Zunil, Las Mercedes (*Champion*).

A large number of examples. Belongs to a group of smaller species, widely distributed in Tropical America, in which the stria accompanying the fore margin of the thorax is deep and continuous, and the upper surface more or less thickly punctured. The present species agrees with the South-Brazilian *A. semipunctatus* in the puncture-rows of the elytra scarcely reaching the base, and not being impressed at the apex or forming there two or more sharp striæ; but it seems to differ in the greater regularity of the rows, the punctures of which in *A. semipunctatus* are in many places out of line, and the rows consequently confused; in *A. vicarius* the rows are nearly straight, except the second, third, fifth, and sixth towards the apex. The head (except the vertex) is thickly covered with large, separated punctures, which are sometimes equally strong throughout, and sometimes finer on the forehead than on the clypeus. The thorax differs in form from that of the more typical *Acanthoceri* in having distinct, though rounded, hind angles; it is punctured almost as strongly on the disc as on the sides, but there is a space in the middle of the lateral margins, a vague dorsal line, and a round spot on each side of the disc smooth and polished; the punctuation, however, varies in strength in different individuals, the same as it does on the scutellum.

5. **Acanthocerus micros.**

A. semipunctato affinis; multo minor et differt fronte lævi tibiisque posticis extus striis subtilibus longitudinalibus hic illic confluentibus insculptis. E minoribus; clypeo (præcipue basi) punctato, fronte verticeque lævibus; thorace scutelloque punctulatis, spatiis lævibus; elytris striato-punctatis, stria 2ª et 3ª mox a basin fractis et irregularibus, striis exterioribus versus apicem fere continuis.

Long. $2\frac{1}{2}$–3 millim.

Hab. Mexico, Jalapa, Misantla (*Höge*).

The chief distinction between this species and *A. semipunctatus* is furnished by the widely different sculpture of the hindmost tibiæ. Germar describes this sculpture (in *A. semipunctatus*) as "Runzeln welche durch zusammenfliesende punkte entstehen," which Von Harold (Col. Hefte, xii. p. 35) further explains as "bilden die Runzeln . . . . . eine dichte aus kurze halbkreisen bestehende punktirung." This perfectly well suits our *A. vicarius* as well as *A. semipunctatus*; but *A. micros* shows in the tibial sculpture no trace of small semicircles, the sculpture consisting of fine longitudinal partly dichotomous and partly confluent lines. The approximation of the punctures almost (but not quite) to the formation of linear striæ, in many of the rows at the apex of the elytra, also distinguishes the present species.

6. **Acanthocerus rotundicollis.** (Tab. VII. fig. 25.)

Minutus, æneo-rufus, politissimus; capite omnino convexo nec margine explanato, antice subtiliter discrete punctulato, clypeo apice strigato; thorace a basi oblique usque ultra medium ampliato deinde ad apicem citius angustato, toto sparsim punctulato, stria marginali anteriore integra; scutello medio punctulato;

elytris utrinque striis undecim acute incisis, subtilissime punctulatis, æqualiter a basi usque ad apicem impressis et inter se distantibus, interstitiis planissimis et minutissime punctulatis.
Long. 2 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*). One example only.

Differs from all other *Acanthoceri* known to me by the convexity of the head being continued to its edges; and also by the form of the thorax, the sides of which are cut in nearly a straight line, and obliquely from opposite the outer angle of the scutellum to near the anterior angles, at which point the thorax is at its greatest width. On each side of the basal margin of the thorax, near the angle of the scutellum, is a small but conspicuous concavity. In the way the single example is mounted I cannot examine the sculpture of the exterior face of the hind tibiæ.

Fam. ACLOPIDÆ.

APOROLAUS.

Corpus elongato-ovatum, glabrum, lateribus et subtus cum pedibus longe pilosis. Clypeus brevissimus, antice arcuatus; labrum planum, clypeo fere æquale apice medio acuminatum. Mandibulæ labrum amplectentes, intus ciliatæ; apice anguste prolongatæ, liberæ, acute bidentatæ. Maxillæ inermes, lobo dense penicillato. Mentum transverse quadratum planum, apice medio incisum. Ligula lobis angustis elongatis, divergentibus. Canthus oculorum brevissimus. Antennæ 9-articulatæ; clava compacta, art. 7° cupuliformi cæteris includentibus. Elytra postice conjunctim rotundata, pygidium tegentia, margine apicali incrassato. Pedes sat graciles; coxæ anticæ conicæ, exsertæ; tibiis anticis extus dentibus recte exstantibus tribus; coxæ intermediæ obliquæ, contiguæ; tibiæ posticæ, ♂, graciles, rectæ, ♀ extus ante apicem sinuatæ, apice bicalcaratæ. Tarsi mediocriter elongati; ungues elongati, graciles, simplices, paronychio bisetoso minuto. Metasterni episterna elongata triangularia; epimeris apicalibus parvis transversalibus. Segmenta ventralia sex libera.

An interesting generic form, connecting three families placed wide apart in Lacordaire's system, viz. Hybosoridæ, Aclopidæ, and Glaphyridæ; and demonstrating that the mouth-structure (especially the free bilobed ligula) is more to be relied upon than the position of the abdominal spiracles as indications of natural affinity in this portion of the Lamellicorn series. The legs (with the exception of the male developments) are those of the typical Glaphyridæ, the absence of transverse tibial carinæ distinguishing this genus from *Aclopus*, and approximating it to *Glaphyrus*, as also does the cupuliform club of the antennæ. The form of the metathoracic episterna and epimera is that of *Cœlodes* in the Hybosoridæ; and the shape and relative position of the clypeus, labrum, and mandibles are the same as in *Aclopus*, *Hybosorus*, and not essentially different from the Glaphyridæ.

The abdominal spiracles are microscopically small; with a powerful lens three are visible on the connecting membrane, and a posterior one is just perceptible on the edge of a ventral segment.

1. **Aporolaus fimbriatus.** (Tab. VIII. fig. 1, ♂.)

Elongato-ovatus, glaber, pilis longis exstantibus rufis marginatus, corpore subtus pedibusque similariter pilosis; supra rufo-testaceus, capite nigro, interdum thoracis disco autem nigro, vel elytris dimidio postico et capite nigris thorace elytrorumque basi rufo-testaceis; subtus niger, thorace coxisque anticis (et interdum ventre) testaceis; capite thoraceque sparsim punctatis; elytris haud profunde punctato-striatis; subtus lævi.

♀. Pedes præcipue tarsi ungues breviores; tibiæ posticæ extus ante apicem sinuatæ apiceque productæ.

Long. $5\frac{1}{2}$–7 millim.

Hab. PANAMA, Bugaba 1000 feet (*Champion*).

A large number of examples, the great majority males. Mr. Champion met with this species only in one little opening in the forest, where it was noticed in profusion for a few days; the examples were mostly found upon the wing or resting on leaves.

Fam. CHASMATOPTERIDÆ.

CHNAUNANTHUS.

Chnaunanthus, Burmeister, Handb. der Ent. iv. 1, p. 31 (1844).

This genus contains a single species apparently peculiar to Mexico.

1. **Chnaunanthus discolor.** (Tab. VIII. fig. 2.)

Chnaunanthus discolor, Burm. Handb. der Ent. iv. 1, p. 32[1].

Hab. MEXICO[1], Guanajuato, Parada (*Sallé*), Mexico city, Tacambaro in Michoacan, Matamoros Izucar, Cholula (*Höge*), Hacienda de San Miguelito (*Dr. Palmer*).

This species is sometimes entirely black, but most frequently the head and thorax only are black, the elytra being light testaceous-brown with the sides and suture dusky or wholly testaceous. An example from Tacambaro is figured.

Subtribe II. *Ligula consolidated with the mentum.*

Fam. MELOLONTHIDÆ.

Subfam. *HOPLIINÆ.*

HOPLIA.

Hoplia, Illiger, Mag. Ent. ii. p. 226 (1803); Lacordaire, Gen. Col. iii. p. 195 (1856).

About ninety species of this well-known genus have been described. It is widely distributed over both hemispheres, but much more numerously represented in temperate than in tropical countries, and appears to be unknown in Australia.

Group I. *Hind tibiæ linear.*

1. **Hoplia festiva.** (Tab. VIII. fig. 3.)

Hoplia festiva, Burm. Handb. der Ent. iv. 1, p. 193, and iv. 2, p. 485 [1].

Hab. Mexico [1], Cordova, Orizaba, Tomatlan (*Sallé*), Coscomatepec (*Höge*).

Burmeister's description, drawn up apparently from a single example, fails to convey a correct idea of the colours and markings of this elegant species. The pattern of the elytra in most examples consists in two or three black longitudinal lines with two large black spots in each interspace, the ground-colour varying from light greenish-ashy to orange-fulvous. The numerous varieties diverge from this typical pattern in opposite directions:—1, towards melanism, the black spots and stripes being fused together, at first leaving pale spots on a dark ground, and in the extreme form the elytra becoming wholly velvety-black; 2, towards lack of black pigment, the black lines and spots becoming attenuated, and more or less vague; 3, until at length the elytra are uniformly ashy or fulvous. The thorax is generally, as Burmeister describes it, ashy with a broad discoidal black patch, but varies in the black central spot being dissolved into two vittæ, or (in the unicolorous pale form) disappearing altogether.

I can detect no sexual difference among the numerous examples either in the abdomen, legs, or antennal club. The anterior tibiæ are in all tridentate. We figure a specimen from Tomatlan.

2. **Hoplia mexicana.**

Hoplia mexicana, Gemm. & Harold, Cat. Col. iv. p. 1113.

Hoplia irrorata, Burm. Handb. der Ent. iv. 2, p. 484 (nom. præocc.) [1].

Hab. Mexico [1].

A species placed by Burmeister next to *H. festiva*; it is not contained in our collection.

3. **Hoplia asperula.** (Tab. VIII. fig. 4.)

Parva, oblonga, supra squamulis elevatis granuliformibus densissime vestita, atro- vel fulvo-fusca, thorace vitta dorsali lateribusque argenteis, elytris pone medium maculis 6 oblongis obscurius fuscis fasciatim ordinatis et guttis cinereis marginatis; corpore subtus argenteo-margaritaceo squamosis, pygidio plus minusve fulvescente; femoribus squamis angustis argenteis sparsim vestitis, tibiis tarsisque (his rufescentibus) cinereo-setosis; clypeo breviter trapezoideo, margine antico truncato et reflexo; thorace post medium sinuatim angustato; tibiis anticis 3 dentatis, posticis rectis, margine superiore ante apicem leviter sinuato; antennis 9-articulatis, clava nigra.

Ungues pedum 4 anteriorum omnes fissi, intermediorum minore sat elongato.

Long. 4–4½ millim.

Hab. Mexico, Jalapa (*Höge*).

The densely packed scales of the upper surface are not flat and adpressed as in

H. festiva and in other species, but seem to be implanted obliquely, so that viewed sideways the surface of the body appears to be minutely and closely granulated. The whole surface is free from erect hairs, except a few on the head and sides of the thorax. The transverse row of oblong dark spots on the elytra and the accompanying ashy-white specks are often ill-defined, but in other examples the white spots are large and conspicuous and the black spots scarcely apparent. The silvery dorsal line of the thorax and similarly coloured sides are often obsolete; on the other hand, there is sometimes a pale supplementary vitta on each side of the dorsal one.

Found in numbers by Herr Höge.

4. **Hoplia disparilis.** (Tab. VIII. fig. 5, ♀.)

Parva, oblongo-ovata, clypeo breviter trapezoidali, antice truncato et acute reflexo; capite nigro, clypeo interdum rufo; thorace medio perparum dilatato, angulis posticis subrectis, reflexis; tibiis anticis valide tridentatis, posticis rectis; corpore subtus squamis rotundis adpressis argenteis densissime vestito, pygidio fulvo; antennis nigro clavatis; pedibus pallidis.

♂. Caput et thorax longe et dense hirsuta, integumento nitido; elytra dense breviter incumbenti-hirsuta, fulvo-cinerea, macula oblonga posteriore prope suturam vittisque indistinctis fuscis.

♀. Caput hirsutum; thorax squamis angustis densissime vestitus, antice solum hirsutus; elytra squamulis parvis adpressis dense vestita; fulvo-ochracea, thoracis vittis duabus rufis elytrisque vittis indistinctis pallidis.

Long. 4½ millim.

Hab. Guatemala, Chiacam (*Champion*).

Like some of the much larger North-American *Hopliæ* the male of this species is clothed with hairs, and the female with flat scales. The male has long fine hairs on the thorax, which is otherwise glabrous, except for a small patch of pale flattened hairs on each side; and closely-set, short, incumbent hairs or scaly hairs on the elytra. In the female the thorax is thickly clothed with narrow scales, the elytra with more smoothly-laid and flattened scales. The pure silvery-white, large, round, flattened scales of the under surface distinguish *H. disparilis* in both sexes.

5. **Hoplia cretacea.** (Tab. VIII. fig. 6.)

Oblonga, rufescens, squamis parvis adpressis rotundis dense vestita, thorace et elytris (his seriatim) griseo-setosis, subtus cretaceo-albo leviter metallica; clypeo obtuso rotundato, margine subtiliter reflexo; thorace medio subangulatim dilatato, lateribus posticis haud sinuatis, angulis posterioribus obtusis; pedibus cinereo-pilosis; tibiis anticis tridentatis, posticis fere rectis; antennis 10-articulatis.

Thorax cinereus vittis quatuor fusco-rufis, fere indistinctis vel obliteratis; elytra cinerea, macula utrinque post medium magna transversa angulata fusca fasciaque lobata anteriore rufo-fusca, sæpe indistinctis interdum obliteratis, elytrisque toto griseis.

Long. 5¼ millim.

Hab. Mexico, Jalapa (*Sallé*, *Höge*), Oaxaca (*Sallé*).

Distinguished from allied species by the obtusely rounded and slightly upturned margin of the clypeus; the closely-packed, small, round scales of the upper surface;

and the larger and flatter scales, equally round, and of a slightly silvery or pearly chalk-white hue, of the under surface. Judging from the distinctly longer antennal club of some of the specimens, there are both sexes in the series from Jalapa.

The antennæ are as a rule wholly testaceous-red, but in some examples the club is black. A specimen from Jalapa is figured.

6. **Hoplia teapensis.**

Præcedenti affinis, differt clypeo altius reflexo, thorace postice rectius angustato, angulis subrectis. Oblonga, rufescens vel fusca, squamis angustis dense vestita; subtus squamis latis adpressis margaritaceis; thorace et elytris (his seriatim) griseo-setosis.

Long. $5\frac{1}{4}$–$5\frac{1}{2}$ millim.

Var. vel ♂. Supra et subtus breviter incumbente pilosa.

Hab. Mexico, Teapa in Tabasco (*Sallé*, *Höge*). Numerous examples.

7. **Hoplia inops.**

Oblongo-ovata, rufescenti-fusca, supra squamis angustis dense vestita, medio thorace (♂?) subglabra; thorace vitta lata mediana altera utrinque abbreviata; elytris plaga magna oblonga antemediana (a sutura pallida divisa) vittisque lateralibus et apicalibus indistinctis, obscurius fuscis; clypeo sicut in *H. teapensi* late rotundato, margine reflexo; thorace et elytris (his seriatim) griseo-setosis; corpore subtus squamis parvis angustissimis sordide griseis vestito, medio fere piloso; tibiis anticis tridentatis, dente superiore minuto; tibiis posticis subrectis.

Variat: maculis vittisque indistinctis; vel elytris fere toto atro-fuscis.

Long. $4\frac{1}{2}$ millim.

Hab. Mexico, Teapa in Tabasco (*Höge*); Guatemala, Chiacam (*Champion*).

Many examples from Chiacam, one only from Teapa.

8. **Hoplia argyritis.** (Tab. VIII. fig. 7.)

Oblonga, supra squamis parvis rotundis dense vestita, clypeo late rotundato margineque elevato solum glabro; colore ochraceo, thorace vittis dorsalibus duabus (interdum conjunctis) elytris ochraceo-fuscis, basi fasciaque post medium undulata ochraceis; interdum fuscis; thorace et elytris (his seriatim) griseo-setosis; corpore subtus, pygidio, femoribus extus, tibiis intus et extus tarsisque splendidissime argenteo-squamosis; tibiis anticis extus tridentatis, dente superiore interdum subobsoleto; tibiis posticis subrectis; thorace angulis posticis rectis; antennis 10-articulatis.

Long. $5\frac{1}{2}$–7 millim.

Hab. Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*).

Belongs to the same subgroup as *H. cretacea*, *H. teapensis*, and *H. inops*, distinguished by the rows of short and rigid pale bristles on the elytra, and a general similarity of colours and markings; most nearly allied to *H. cretacea*, but distinguished by the brilliant silvery under surface and legs. The sexes are not distinguishable by any secondary sexual characters. We figure an example from Chontales.

9. Hoplia —— ?

Hab. Mexico, Chiapas (*Sallé*).

A single, abraded, specimen of a species allied to *H. argyritis*, but quite distinct.

10. Hoplia —— ?

Hab. Mexico, Cordova (*Sallé*).

A single example of a species allied to *H. inops*, but apparently distinct.

11. Hoplia subcostata.

H. squamiferæ (Burm.) similis. Longius oblonga, elytris utrinque obtuse bicostatis calloque apicali transverso valido; obscure fusca, squamis parvis angustissimis fulvo-fuscis supra vestita, maculis indistinctis cinereis et atro-fuscis, setis suberectis elytrorum vix perspicuis; clypeo late rotundato, margine reflexo subsinuato; thorace angusto, medio angulatim dilatato; subtus pilis griseis subsparsim vestita; tibiis anticis tridentatis, posticis subrectis; unguibus intermediis fere æqualibus; antennis 10-articulatis, rufis, clava nigra; scutello nigro.

Long. 6–8 millim.

Hab. Guatemala, Cerro Zunil (*Champion*).

In two examples (♀ ?) the thorax has a dorsal groove, in the third it is convex.

12. Hoplia rotunda.

Parva, breviter ovata, præcipue thorace valde rotundata; supra nigra, brevissime dense nigro-setoso-squamosa, subnitida; subtus squamis rotundis convexis læte margaritaceis vestita, pygidii squamis flavescentibus; antennis nigris; pedibus anticis rufescentibus, posticis nigris, femoribus tibiisque 4 posterioribus margaritaceo-squamosis; clypeo brevi subsemicirculari; thorace quam elytra multo angustiore, medio late subangulatim rotundato, angulis posticis obtusis.

Long. $5\frac{1}{2}$ millim.

Hab. Guatemala, near the city alt. 5000 feet (*Salvin*).

Group II. *Hind tibiæ swollen in the middle.*

13. Hoplia squamifera. (Tab. VIII. fig. 8.)

Hoplia squamifera, Burm. Handb. der Ent. iv. 4, p. 198[1].

Hab. Mexico[1], Cordova, Orizaba, Huatusco, Juquila (*Sallé*), Mexico city, Jalapa (*Höge*); Guatemala (*Sallé*); Panama, Volcan de Chiriqui (*Champion*).

In the more typical examples (not the most numerous of the large series examined) the thorax has two (sometimes united) dorsal vittæ and the elytra a broad postmedian fascia (margined with cinereous spots) dark brown; but the dark pigment sometimes expands into a large central patch common to both elytra, or diminishes to two bands of dusky spots; or the dark spots are absent and their companion cinereous spots only present. The majority of the specimens are, however, uniform greyish-ochreous. The elytra have a few very short stiff bristles arranged in rows; the under surface is covered with small oval greyish scales implanted at short distances from each other.

The single example from Chiriqui is unusually small ($5\frac{1}{4}$ millim.), but offers no other difference. The species bears in some collections the MS. name of *H. nebulosa*, Deyr. A specimen from Jalapa is figured.

14. **Hoplia guatemalensis.**

H. squamiferæ affinis et similis; differt corpore subtus pilis parvis incumbentibus subsparsis vestito, clypeo semiovato (margine reflexo), elytris sat dense seriatim setosis setis gracilibus. Supra squamis parvis densissime vestita ochraceo-fusca, thorace vittis quatuor elytrisque fascia lata undulata paullo ante apicem obscurius fuscis; raro pallide fusca unicolor; antennis rufis.

Long. 7 millim.

Hab. Guatemala (*Sallé*), Capetillo (*Champion*).

15. **Hoplia albisparsa.** (Tab. VIII. fig. 9.)

H. squamiferæ affinis; differt colore nigro-fusca, supra et subtus squamis cinereis conspersa; corpore toto squamoso; clypeo sat elongato et angustato, margine alte reflexo; elytris setis gracilibus fuscis obsitis.

Long. 6–7 millim.

Hab. Mexico, Totosinapan (*Sallé*).

Three examples.

16. **Hoplia ——?**

Hab. Costa Rica, Volcan de Irazu (*Rogers*).

A single example of what appears to be a species distinct from *H. squamifera*.

17. **Hoplia surata.** (Tab. VIII. fig. 10.)

Oblongo-ovata, supra squamis rotundis adpressis dense vestita, fulva, vittis quatuor elytrorum (1ª prope suturam multo latiore) interdum indistinctis cinereis, subtus alba squamis nonnullis opalescentibus; clypeo semiovato, margine reflexo; femoribus tibiisque rufis politis, tibiis posticis apice tarsisque omnibus nigris, posticis argenteo-squamosis; antennis 10-articulatis (articulo 7° minuto, 6° magno), nigris, articulis 2 basalibus rufo-nitidis.

Long. $6\frac{1}{2}$ millim.

Hab. Costa Rica, Volcan de Irazu (*Rogers*).

Three examples. The shining red legs and much swollen hind tibiæ are conspicuous characters of this species.

Subfam. *SERICINÆ*.

ASTÆNA.

Astæna, Erichson, Archiv für Naturg. 1847, i. p. 101; Burmeister, Handb. der Ent. iv. 2, p. 125 (1855).

As revised by Burmeister this genus embraces a considerable diversity of specific forms allied to the genus *Serica*, all inhabiting South America, chiefly the intertropical

zone. They differ from the *Sericæ* of the Old World and temperate North America by the somewhat narrower hind coxæ and the diminished number of antennal joints, viz. 8 or 9.

1. **Astæna macilenta.**

A. cognatæ (Burm.) affinis et similis; differt corpore multo angustiore; cylindrica sat elongata, ænescenti-rufa, pruinosa, sericeo-opaca; capite nitido, sparsim punctulato, clypeo transversim quadrato, angulis rotundatis, margine alte elevato; thorace lateribus medio angulato, antice et postice mediocriter angustato, angulis posticis acutis; elytris punctulato-striatis, interstitiis convexis; pygidio lævi.

Antennæ 8-articulatæ; tibiæ anticæ 3-dentatæ. Coxæ posticæ ventris segmentum primum haud tegentes.

Long. 10 millim. ♀.

Hab. Costa Rica (*coll. Bates*).

One example.

2. **Astæna opalicauda.**

Serica holosericeæ (Scop.) subsimilis, sed magis elongata thoraceque medio angulatim dilatato; fusco-rufa, opaca pruinosa, elytris certo situ læte opalescentibus; clypeo subquadrato, angulis rotundatis, fere lævi, marginibus late et alte elevatis; fronte nigra, punctata; thorace et elytris passim discrete punctulatis, his punctato-striatis, interstitiis paullo convexis; pectore et ventre (♂) medio dense fulvo-pilosis.

Antennæ 8-articulatæ; tibiæ anticæ 3-dentatæ; coxæ posticæ extus latiores, medium segmentum secundum tegentes.

Long. 9 millim. ♂.

Hab. Nicaragua, Chontales (*Janson, coll. Bates*).

One example.

Subfam. *MACRODACTYLINÆ.*

FAULA.

Faula, Blanchard, Cat. Coll. Ent. i. p. 124 (1850).

Ceraspis pars, Burmeister, Handb. der Ent. iv. 2, p. 100 (1855).

Distinguished from *Ceraspis*, according to both the authors above cited, by the uncleft tarsal claws. Blanchard erroneously placed *F. cornuta* (*Ceraspis rufipes*, Burm.), which has bifid claws, at the head of the genus, guided doubtless by the similarity of general form (the numerous spines of *Faula* being greatly elongated) and the subglabrous surface. *F. cornuta* and its allies being excluded, the genus is not well demarcated by facies from *Ceraspis*, and is by some authors considered only as one of the groups of that genus. So far as at present known, *Faula* is restricted to the northern part of Tropical America.

1. **Faula pilatei.** (Tab. VIII. fig. 11.)

Ceraspis pilatei, Harold, Ann. Soc. Ent. Fr. 1863, p. 174[1].

Hab. Mexico, Teapa[1], Juquila (*Sallé*).

2. **Faula mexicana.**

Ceraspis mexicana, Harold, Ann. Soc. Ent. Fr. 1863, p. 175 [1].

Hab. Mexico, Playa Vicente (*Boucard* [1], *Sallé*); Guatemala, Panima in Vera Paz (*Champion*).

3. **Faula centralis.** (Tab. VIII. fig. 12.)

Faula centralis, Sharp, Journ. Linn. Soc., Zool. xii. p. 131 [1].

Hab. Nicaragua (*Sallé*), Chontales (*Belt* [1], *Janson*); Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).

A Bugaba specimen is figured.

4. **Faula brunneipennis.** (Tab. VIII. fig. 13.)

Anguste oblonga, setulis griseis (apud callum elytrorum apicalem solum dense) obsita, scutello longius villoso; ænescenti-nigra, polita, antennis, pedibus elytrisque fulvo-testaceis; clypeo brevi, obtuse vel sinuatim late truncato, ♂ antice angustato, ♀ breviore transverso; thorace sparsim et grosse sed nullo modo profunde punctato, spatiis magnis lævibus; elytris mediocriter ruguloso-punctulatis.
Long. 10 millim.

Hab. Costa Rica (*Sallé, Van Patten*), Volcan de Irazu (*Rogers*).

In most examples of the numerous series examined there is a trace of the median linear dorsal callus of the thorax characteristic of the typical *Faulæ*; but the elytra have no trace of costæ.

5. **Faula hispida.** (Tab. VIII. fig. 14.)

F. brunneipenni quoad formam simillima, supra et subtus rufo-testacea æneo-tincta (elytris obscurioribus, callo apicali pallido), nitida, setulis sparsis griseis, apud elytra setis longissimis erectis intermixtis, vestita; thorace fere æqualiter sparsim punctato; elytris ruguloso-punctatis.
Long. 10 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Two examples only.

6. **Faula velutina.** (Tab. VIII. fig. 15.)

Castanea, subtus dense incumbente griseo-pubescens, supra capite et thorace pilis sericeis erectis fulvis densissime vestita sicut velutina; elytris nitidis, utrinque 4-costatis, interstitiis punctatis, breviter et sparsim griseo-pilosis; clypeo (♀) breviter trapezoidali, marginibus reflexis.
Long. 13 millim.

Hab. Mexico, Mochitlan in Guerrero (*Baron*), Acapulco (*Höge*).

Two examples only, both females. The example from Mochitlan is figured; this was kindly presented to us by Mr. Harford.

MACRODACTYLUS.

Macrodactylus, Latreille, Fam. nat. du Règne anim. p. 371 (1825); Burmeister, Handb. der Ent. iv. 2, p. 56 (1855); Lacordaire, Gen. Col. iii. p. 244 (1856).

A characteristic American genus, spread over the temperate and tropical regions of the continent, though rare or absent in the plains near the equator. Between thirty and forty species have already been described. In studying the very numerous species from our Fauna I have carefully attended to the secondary sexual characters of the male (discovered by Horn and Kirsch); but have found that, like all other characters in the genus, they are subject to variation, and must be used with caution. The development of the postcoxal spine, for example, though its normal form seems to be specific, is subject to abrupt change in the same species; and the number of ventral setæ on each side the middle line of the abdomen varies, though, making allowances for some variation, they form a very good specific character. The singular and abrupt modification in the pubescence of the thorax in the females of some of the species, described below in their places, and the many variations in colour and amount of the pile, both above and beneath, show how useless descriptions of species in this genus must be unless founded on a good series of examples.

1. **Macrodactylus uniformis.**

Macrodactylus uniformis, Horn, Trans. Am. Ent. Soc. 1876, p. 185[1].

Hab. North America, Arizona[1].—Mexico, Northern Sonora (*Morrison*).

2. **Macrodactylus variipes.** (Tab. VIII. fig. 16.)

A *M. uniformi* differt antennarum clava nigra, tarsis posticis nigris, articulis basi cinereo-pilosis, corpore densissime adpresso cinereo-piloso, elytris sutura et margine plerumque infuscatis.

Long. 10–12 millim.

Hab. Mexico, Saltillo, Monclova, and Parras in Coahuila (*Dr. Palmer*), Durango city (*Höge*), Guanajuato, Oaxaca (*Sallé*).

Scarcely more than a local variety of *M. uniformis*. Like that species and the following (*M. mexicanus*), the male, with very rare exceptions, has a long postcoxal spine, broad and emarginated, or even bifid, at the tip; and a numerous group (3–5) of long and very strong (almost spinous) tawny bristles on each side of the second to the fifth ventral segments, besides similar irregular spines at the apex of the fifth and on the sixth, and also on the middle of the metathorax. The pile of the upper surface is more compact than in any other known species, and light ashy (not tawny) in colour. As in *M. uniformis*, the integument beneath is black.

An example from Parras is figured.

3. **Macrodactylus mexicanus.** (Tab. VIII. fig. 17.)

Macrodactylus mexicanus, Burm. Handb. der Ent. iv. 2, p. 58 (pars)[1].

Macrodactylus angustatus, Casteln. Hist. Nat. Ins. Col. ii. p. 147[2] (nec Latr.; nec Pal. de Beauv.).

? *Macrodactylus cinereus*, Blanch. Cat. Coll. Ent. i. p. 90.

Hab. Mexico[1 2], Duraznal, Etla, Puebla, Oaxaca (*Sallé*), Jalapa (*Höge*), Toluca (*Sallé, Höge*), Mexico city (*Dr. Palmer*, *Flohr*, *Höge*), Alvarez Mountains (*Dr. Palmer*).

Var. vel aberratio ♀. Thoracis pilis medio densissimis, erectis, infuscatis.

Hab. Mexico, Guanajuato (*Sallé*), Mexico city (*Höge*).

Burmeister seems to have regarded this and the preceding (*M. variipes*) as one species; at least his description applies to both. Castelnau's brief description of *M. angustatus* applies well to *M. mexicanus*; and *M. cinereus*, Blanch., might be taken to be the same species, were it not for the locality, Peru.

There is nothing in general form or structure to distinguish *M. mexicanus* from *M. variipes* and *M. uniformis*. It differs, however, in never being of a uniform pale ashy colour above, in the integument (especially of the thorax) being steely-blue, and in the laid pubescence being finer and sparser. A general bluish-grey tint prevails over the surface, varied by a tawny area at the base and shoulders of the elytra. The striæ of the latter are generally left bare of pubescence; but they are sometimes covered; the suture and the outer margin are nearly always blackish. The thorax has a distinct dorsal furrow. The anterior tarsi and the antennal club are black; the four posterior tarsi are rather darker than in *M. uniformis*—black, with the bases of the joints reddish, and ringed with cinereous hairs.

4. **Macrodactylus infuscatus.**

M. mexicano valde affinis, sed differt elytris fulvescenti-fuscis, pilis recumbentibus subtilioribus brevioribusque æqualiter vestitis, striis nullo modo denudatis prosternique spina postcoxali apice late obtusa. Clypeo parum elongato et angustato, apice leviter sinuato; thorace viridescente, pilis densis cinereis vestito, dorso canaliculato; tarsis anticis nigris; tarsis 4 posticis (cum apicibus tibiarum) nigris, basi plus minusve rufis, cinereo-pilosis.

Long. 10–11 millim.

Hab. Mexico, Parada, Etla, Juquila, Oaxaca (*Sallé*), Mexico city (*Flohr*).

Var. *M. vicinus* (Deyrolle, MS.). Elytrorum striis 2 et 3, 4 et 5, 6 et 7 plus minusve approximatis interstitiisque 3° et 5° convexis.

Hab. Mexico, Cuernavaca, Capulalpam, Parada, Juquila (*Sallé*).

I have adopted the name given to one of the above-described forms by Sturm, according to the Sallé collection. The elytra tend to become dusky towards the apex and margins. The metasternum and the ventral segments in the male are armed with spiny

bristles, not notably different in strength and number from those of *M. uniformis* and *M. mexicanus* ♂.

Some examples occur intermediate, in one or other feature, between this species, its variety, and *M. mexicanus*.

5. **Macrodactylus nigripes.**

M. subspinoso quoad formam simillimus; antennarum basi rufa excepta, totus niger, (in immaturo elytris basi fulvis), tarsis 4 posticis plus minusve cinereo-annulatis; pube sat tenui recumbente cinereo vestitus; elytris sutura et marginibus denudatis nigris; clypeo parum elongato, versus apicem leviter rotundato-angustato.

♂. Prosternum spina postcoxali elongata, gracili, apice obtuse rotundato; metasterno medio longe setoso; ventre biseriatim fulvo-multispinoso.

Var. vel aberratio ♀. Thorace medio pilis densissimis suberectis vestito.

Long. 9–12 millim.

Hab. Mexico, Puebla, San Antonio de Arriba, Oaxaca (*Sallé*), Jalapa, Amecameca (*Höge*).

6. **Macrodactylus silaonus.** (Tab. VIII. fig. 18.)

M. mexicano affinis, sed differt pubescentia cærulescenti-grisea, clypeo magis angustato, pedibus rufis, tarsis anticis totis, 4 posticis articulis apice nigris basi griseo-setosis; antennis rufis, clava nigra; integumento dilute cæruleo, in immaturo elytris basi fulvis.

♂. Prosterni spina postcoxali apice late truncata; metasterno et ventre sicut in *M. mexicano* fulvo-spinosis.

Long. 10–12 millim.

Hab. Mexico, Silao, Duraznal (*Sallé*), San Juan del Rio (*Höge*).

Seven examples, the single one from Duraznal being less typical than the others from Silao and San Juan del Rio.

A specimen from San Juan del Rio is figured.

7. **Macrodactylus lineatocollis.** (Tab. VIII. fig. 19.)

M. infuscato similis et affinis, sed differt elytrorum basi prope suturam thoraceque antice erecte nigro-setosis; thorace vittis nudis duabus. Minor, pilis parum incrassatis, recumbentibus, sulphureo-cinereis vestitus; integumento thoracis et scutelli nigro-æneo elytrorumque fulvo; clypeo grossissime punctato-scabroso; tibiis apice tarsisque omnibus nigris, tarsis 4 posterioribus articulis cinereo-annulatis; antennis rufis, clava nigra.

♀. Abdomen subtus medio a basi fere usque ad apicem dense fasciculatim flavo-setosum.

Long. 10 millim. ♀.

Hab. Mexico, Orizaba (*Sallé*).

Two examples, both females.

8. **Macrodactylus fulvescens.** (Tab. VIII. fig. 20.)

? *Melolontha angustata,* Latr. in Humb. & Bonpl. Obs. Zool. ii. p. 109, t. 39. f. 7 (nom. præocc.).

Præcedentibus minor et gracilior, fulvus, capite, thorace scutelloque chalybeis vel æneis, pilis sat brevibus, tenuibus et sparsis, fulvo-cinereis, vestitus; antennis pedibusque rufis; tarsis articulis apice, vel fere toto, nigris nec cinereo-annulatis; clypeo sat elongato et angustato, scabroso-punctato.

♂. Spina postcoxali paullo brevior, apice obtuso; ventre biseriatim spinoso-setoso metasternoque setis nonnullis similibus.

Var. *M. nigritarsis*, Reiche, MS. Corpus densius vestitum, tibiis 4 posticis apice tarsisque totis nigris.

Long. 8½–10 millim.

Hab. Mexico, Cordova, Puebla, Toxpam, Oaxaca (*Sallé*), Cerro de Plumas (*Höge*).

Much resembles the smaller individuals of the North-American *M. subspinosus*, from which it differs in the narrower and longer clypeus.

An example from Toxpam is figured.

9. **Macrodactylus ocreatus.** (Tab. VIII. fig. 21.)

Nigro-æneus, elytris fulvis; supra pilis incumbentibus rufescenti-fulvis densissime vestitus, elytris sutura et margine late subdenudatis, antennis totis, tibiis et tarsis 4 posticis tarsisque anticis (basi excepta) nigris nec griseo-annulatis; clypeo quam in *M. mexicano* longiore, recte angustato, apice obtuse truncato.

♂. Prosterni spina postcoxali elongata, apice obtusa, nigra; ventre fere nudo, nigro-æneo, utrinque pauciter (1 vel 2) nigro-setoso; metasterno absque setis.

♂ *var.* Prosterni spina postcoxali brevi; ventre sicut pectore recumbenti-piloso, utrinque pauciter (1 vel 2) fulvo-setoso; metasterno pauciter setoso.

Long. 10–12 millim.

Hab. Mexico, Cerro de Plumas (*Höge*).

Distinguished from *M. uniformis* and its allies at first sight by the darker reddish-ochreous colour, and the black tibiæ and tarsi, the latter unicolorous. The clypeus is narrower and rather longer than in those species, and the converging sides are straight; the fore margin is truncated, with blunted angles. The pile on the thorax is longer and adpressed, each hair in some examples being many-branched; that on the elytra consists of very short, slanting, separate and simple hair-scales, but sometimes of longer and much denser hairs, the side margins having a broad band nearly denuded, and of the reddish-tawny hue of the elytral integument, and the base a few longer erect bristles.

The variation in the length of the postcoxal spine, and in the colour of the ventral bristles in the male, is noteworthy.

10. **Macrodactylus rhomboderus.** (Tab. VIII. fig. 22, ♂.)

M. infuscato primo intuito similis, sed valde differt clypeo sicut in *M. ocreato* longiore, recte angustato, apice angusto, truncato, antennis toto rufis, etc. Schistaceo-metallicus, elytris fulvis, pube recumbente cinerea usque ad margines dense vestitis; thorace (♂ ♀) relative lato, rhomboideo, medio minus angulatim dilatato et post angulum minus sinuato et angustato; pedibus rufis, tarsis anticis nigris basi rufis, tibiis 4 posticis apice tarsisque nigris his articulis basi rufis.

♂. Prosterni spina postcoxali elongata, apice obtuso; ventre biseriatim pauciter (utrinque 2 vel 3) fulvo-setoso; metathorace setis minoribus.

Long. 10 millim.

Hab. Mexico, Mazatlan (*Höge*).

Five examples.

11. **Macrodactylus zunilensis.** (Tab. VIII. fig. 23.)

Gracilis, fulvus, pilis recumbentibus fulvo-cinereis dense, elytrorum lateribus late sparsius, vestitus; antennis rufis, clava nigra; pedibus rufis, tibiis apice tarsisque rufo- vel nigro-piceis; clypeo quam in *M. subspinoso* angustiore, trapezoideo, apice truncato, angulis rotundatis; thorace angusto, medio minus dilatato et lateribus post angulum haud sinuatis; corpore subtus viridi-metallico, longe adpresso piloso.

♂. Prosterni spina postcoxali elongata, apice obtuse truncato, fulva; ventre biseriatim pauciter (utrinque 2) fulvo-setoso, versus apicem longitudinaliter canaliculato.

Long. 9–10 millim.

Hab. Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

About 200 examples, presenting no noteworthy variation. The integument of the thorax, as well as of the elytra, is testaceous-red and not metallic slaty-green, as in the allied *M. fulvescens*.

In profusion on flowers of arborescent Compositæ in the dry season (*Champion*).

12. **Macrodactylus submarginatus.**

Subgracilis, schistaceo-viridis, elytris rufo-fulvis pilis brevibus recumbentibus flavo-cinereis vestitis; elytris utrinque fere dimidio laterali suturaque denudatis, sericeo-nitidis; antennis pedibusque rufis, tarsis 4 posticis (et raro tibiis apice) rufo- vel nigro-piceis; clypeo alveolato-punctato, anguste trapezoideo, recte angustato, apice truncato, angulis rotundatis; thorace sicut in *M. mexicano* et affinibus.

♂. Prosterni spina postcoxali mediocri, apice obtuso; ventre utrinque seriatim uni- (hic illic bi-) spinoso; metasterno breviter setoso.

Long. 10–11 millim.

Hab. Mexico, Juquila (*Sallé*).

The pile is fine and scanty, leaving the colour of the integument, especially of that of the lateral half of the elytra, and the metallic underside plainly visible.

I have adopted the MS. name given to the species in the Sallé collection.

13. **Macrodactylus sericeicollis.** (Tab. VIII. fig. 24.)

M. submarginato proxime affinis. Obscure viridi-æneus (medio thorace aurato), pilis recumbentibus dense vestitus, apud frontem et thoracis discum læte fulvis, thorace lateribus corporeque subtus flavo-cinereis, elytris denudatis, rufo-fulvis, sericeis (interdum metallescentibus), vitta lata suturali flavo-cinerea solum vestitis; antennis rufis, clava apice nigra; pedibus nigris, femoribus (tibiisque anticis basi) rufis; clypeo sicut in *M. submarginato*, sed versus apicem paullo rotundatim angustato apiceque subsinuato, minus distincte alveolato.

♂. Prosterni spina postcoxali rufa, apice obtuso; ventre utrinque pauciter (1 vel 2) fulvo-spinoso.

Long. 10–11 millim.

Hab. Guatemala (*Sallé*), San Gerónimo, Purula, Coban, and Cubilguitz in Vera Paz (*Champion*).

A very large number of examples. The metallic colour of parts of the integument is generally darker than in *M. submarginatus*, but is sometimes brighter golden-green.

A specimen from Purula is figured. A common insect in various parts of Vera Paz in the dry season (*Champion*).

14. **Macrodactylus lineatus.** (Tab. VIII. fig. 25.)

Macrodactylus lineatus, Chevr. Col. Mex. Cent. i. fasc. 4. no. 48[1].

Hab. Mexico, Vera Cruz[1], Cordova, Toxpam (*Sallé*), Jalapa, Tapachula in Chiapas (*Höge*).

In general form, narrow trapezoidal clypeus, and integumental colours, *M. lineatus* does not differ materially from *M. submarginatus* and *M. sericeicollis.* The denuded parts of the elytra are, however, in some examples not unicolorous tawny-red, but tend to become black towards the sides and apex. In the paucity of the ventral setæ of the male it also agrees with these species; the number of setæ on each side is two, on some segments only one. It differs in the elytra having a broad lateral border, the suture, and three slightly raised costæ on each (the 3rd, 5th, and 7th interstices) denuded; the remaining, and broader, interstices, the thorax, and the hinder part of the head are clothed with moderately short adpressed yellowish-ashy hairs. The antennæ are wholly red; the legs red, with all the tarsi and the apex of the posterior tibiæ black. An example from Cordova is figured.

15. **Macrodactylus impressus.**

M. lineato subsimilis; pallidior, antennis (clava nigra) pedibusque rufo-testaceis, tarsis articulis basi griseo-setosis, elytris pallide-castaneis, interstitiis 3°, 5°, et 7° pilis brevibus incumbentibus flavis vestitis, 3° et 5° ante apicem coeuntibus, cæteris denudatis vel sparsissime pilosis; capite, thorace corporeque subtus æneseentibus, breviter flavo-pilosis; clypeo trapezoideo, recte angustato, apice truncato, angulis rotundatis; thorace dorso vage multi-impresso.

♂. Prosterni spina postcoxali cylindrica, apice emarginato; ventre biseriatim fulvo-setoso, setis utrinque 3 vel 4; metasterno multi-setoso.

Long. 10–11 millim.

Hab. Mexico, Ciudad and Refugio in Durango (*Höge*), San Andres (*Sallé*).

Bears the MS. names of *M. plumbeicollis,* Chevr., and *M. impressicollis,* Reiche, in the Sallé collection.

16. **Macrodactylus costulatus.**

M. lineato affinis; gracilior, schistaceus, viridi-schistaceus vel chalybeus, parce adpresse cinereo-pilosus; elytris fulvo-rufis (interdum postice nigricantibus), utrinque bicostulatis, interstitiis 2° et 4° latioribus cinereo-pilosis, 1° (suturali), 3°, 5° et totis exterioribus denudatis; pedibus rufis, tarsis 4 posticis apice tarsisque nigris, his articulis basi interdum rufis (rarissime tibiis posticis toto nigris); antennis rufis, clava interdum apice infuscata; clypeo anguste trapezoideo, apice truncato, angulis rotundatis; thorace passim punctulato, ♂ angusto medio angulato-dilatato et post angulum sinuato-angustato, ♀ paullo latiore et obtusiore; scutello viridi vix pubescente.

♂. Prosterni spina postcoxali valida, apice obtuso vel truncato; ventre utrinque biseriatim fulvo-setoso, setis utrinque 1–3.

Long. 9–11 millim.

Var. *M. rufipennis.* Elytra glabra, paucissime pilosa, testaceo-rufa, costis vix elevatis.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, near the city

5000 feet (*Salvin*), Dueñas, Coban (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica (*Sallé*, *Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*).

17. **Macrodactylus suavis.** (Tab. IX. fig. 1.)

M. costulato affinis, adhuc gracilior (♂ angustus, elongatus); thorace subovato, medio rotundato-dilatato parum angulato; scutello cinereo-pubescente. Viridi-æneus, elytris dimidio basali fulvis raro toto viridi-æneis, thorace lateribus et vitta interrupta dorsali cinereo-pilosis; elytris utrinque bicostulatis, sutura, costa exteriore et lateribus (late) denudatis, interdum costa prima autem nuda, raro costis totis pube fulvo-cinerea tectis; antennis (clava interdum infuscata) pedibusque rufis, tibiis 4 posticis apice tarsisque nigris; pygidio æneo (interdum rufo vel flavo), polito, parce punctato-piloso; clypeo angusto, trapezoideo, lateribus versus apicem rotundatis, apice obtuse sinuatim truncato.

♂. Prosterni spina postcoxali valida, setosa, apice obtuso; ventre biseriatim fulvo-setoso, setis utrinque 1 vel 2.

Long. 9–10 millim.

Hab. Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet, Cache (*Rogers*); Panama, Bugaba, near the city (*Champion*).

Var. Paullo major (11 millim.), tibiis 4 posticis nigris.

Hab. Nicaragua, Chontales (*Belt*).

Examples with yellow or obscure reddish pygidium are from Bugaba only, mingled with others of the normal colour.

A specimen from Bugaba is figured.

18. **Macrodactylus sericinus.** (Tab. IX. fig. 2.)

M. suavi proxime affinis; differt corpore robustiore; elytris glabris, sericeis, castaneo-rufis, dimidio posteriore nigris, interstitiis æqualibus, paullo convexis; capite thoraceque fusco-æneis vel cupreis, hoc alutaceo et punctulato, pilis nonnullis cinereis apud marginem et lineam dorsalem; antennis pedibusque rufis, tarsis omnibus tibiisque 4 posticis nigris; pygidio nigro-æneo, medio cinereo-piloso.

♂. Prosterni spina postcoxali apice angustiore; ventre biseriatim pauciter (utrinque 1 vel 2) setoso.

Long. 10 millim.

Hab. Nicaragua (*Sallé*), Chontales (*Belt*, *Janson*).

The thorax in this species has a similar subovate outline to that of *M. suavis*.

19. **Macrodactylus sylphis.** (Tab. IX. fig. 3.)

M. sericino affinis; magis elongatus, angustus; elytris glabris, fulvis, læte sericeo-nitentibus, plerumque versus basin et suturam setis validis nigris obsitis; thorace medio rotundato-angulato, (cum capite) viridi, lateribus vittaque dorsali (et scutello) cinereo-pilosis; antennis pedibusque rufis, tarsis tibiisque posticis apice nigris; corpore subtus viridi-æneo, cinereo-piloso; pygidio testaceo-rufo æneseente.

♂. Prosterni spina postcoxali nulla; ventris setis paucis, parvis et subtilibus; pedibus posticis maxime elongatis.

Var. Pygidio nigro-æneo, medio cinereo-piloso.

Long. 11–14 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).

The form or variety with dark brassy pygidium appears confined to Chontales, that with yellow pygidium to Bugaba; one of the latter is figured.

20. **Macrodactylus rufescens.** (Tab. IX. fig. 4.)

Angustus, viridi-schistaceus, subtus pygidioque nigro-æneus, elytris fulvo-rufis, glabris vel vix perspicue brevissime pilosis, antennis pedibusque rufis, illis clava nigra, tarsis nigris, articulis basi cinereo-setosis interdum dimidio basali rufis; clypeo sat brevi, angustato, apice sinuato-truncato; thorace angustato, ante medium angulatim dilatato, lateribus post angulum valde sinuatis; elytris interstitiis convexis, alternis interdum altioribus.

♂. Thorax denudatus vel brevissime recumbente cinereo-pilosus. Prosterni spina postcoxali sat valida, apice angusto obtuso; ventre biseriatim multi-setoso, spinis elongatis, fulvis, utrinque 5–7 metasternoque dense setosis.

♀. Thorax densissime et brevissime erecte cinereo-pilosus; metasternum et venter medio dense suberecte longe pilosa.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*), Yolotepec (*Sallé*), Las Vigas (*Höge*); Guatemala (*Sallé*), Quiche Mountains (*Champion*).

Var. ♀. Corpus supra et subtus pedesque dense erecte pilosa setis longioribus intermixtis.

Hab. Mexico, Yolotepec (*Sallé*).

Var. ♀. Thorax multo longius pilosus elytraque dense subtiliter recumbenti-pubescentia.
Long. 8½–14 millim.

Hab. Guatemala, Quiche Mountains (*Champion*).

Similar in colour to *M. costulatus* var. *rufipennis*; but distinguished from it by the much more numerous and longer spiny bristles on each side of the ventral segments, and by the cinereous rings of the hind tarsi. In the numerous male ventral spines, the ashy-ringed hinder tarsi, and the rather short trapezoidal clypeus, the species betrays an affinity to *M. variipes* and its allies.

The small examples are from North Mexico (Durango). In Guatemalan male examples he elytra are silky fuscous at the apex. We figure a specimen from Las Vigas.

21. **Macrodactylus longicollis.**

Melolontha longicollis, Latr. in Humb. & Bonpl. Obs. Zool. i. p. 203, t. 22. f. 2[1].

♂. Prosterni spina postcoxali brevi, valde curvata, apice obtuso; ventre setis utrinque 4 nigris, rigidis, elongatis; metasterno longe setoso.

♀. Venter recumbente cinereo-pilosus, ano longe setoso.
Long. 13 millim.

Hab. Mexico, Acapulco[1], Sacatepec, Oaxaca (*Sallé*).

In this insect the sides of the thorax are clothed with recumbent ashy pile; the dark blue elytra in the males being glabrous or nearly so, but they are sometimes clothed like the sides of the thorax. The ashy-ringed hind tarsi and the numerous spiny ventral setæ point to an affinity with *M. variipes* and its allies.

According to the Sallé collection, this species is the *M. nigrocyaneus*, Deyr. M.S., of Gemm. & Har. Cat. iv. p. 1148.

22. **Macrodactylus championi.** (Tab. IX. fig. 5.)

M. longicolli affinis; differt colore obscure viridi-æneo, glabro, pedibus rufis, tarsis articulis apice nigris basi cinereo-pilosis; clypeo breviter trapezoideo; thorace angusto, medio utrinque valde angulato; antennis rufis, clava nigra; elytris alutaceis et rugulosis.

♂. Femora antice subtus dente magno, acuto. Caput et thorax dense confluenter punctulata. Spina postcoxalis brevissima; ventris setæ elongatæ, fulvæ, numerosæ, utrinque 5 vel 6; metasternum longe setosum.

♀. Thorax grossissime punctatus et erecte fulvo-pilosus (medio interdum lævi); venter et metasternum medium erecte pilosi.

Long. 10–12 millim.

Hab. Guatemala, Totonicapam 8500 to 10,000 feet, Calderas 7000 feet (*Champion*).

23. **Macrodactylus dimidiatus.**

Macrodactylus dimidiatus, Guérin, Mag. Zool. 1844, t. 147. p. 1[1].

Macrodactylus semicæruleus, Burm. Handb. der Ent. iv. 2, p. 62[2].

♂. Tibiæ anticæ intus angulatim dilatatæ, femora antice subtus dente lato et obtuso. Prosterni spina postcoxali brevi, acuta, interdum nulla; ventris setis obscure piceis, tenuibus, utrinque 1 vel 2, apice cum pygidio flavo.

Long. 11–13 millim.

Hab. Mexico[1 2], Toxpam, Cordova (*Sallé*), Misantla, Mexico city, Jalapa (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Senahu, Sinanja (*Champion*).

A large number of examples including Guérin's type specimen, which is a female.

24. **Macrodactylus ovaticollis.** (Tab. IX. fig. 6.)

Gracilis, thorace ovali, lateribus nullo modo angulatis; fulvus (elytris sutura et margine anguste denudatis, nigris, costulis utrinque 2 fulvo-denudatis) pube recumbente longa sed subtili fulvo-cinerea vestitus; antennis rufis, clava (♂) elongata, apice infuscata; pedibus rufis, tibiis apice tarsisque nigris; clypeo anguste trapezoideo, antice valde angustato, apice truncato; femoribus anticis subtus prope basin spina unciformi tenui armatis; spina postcoxali mediocri, obtusa, fulva; ventre setis fulvis paucissimis utrinque 1 vel 2. ♂.

Long. 10 millim.

Hab. Panama (*Sallé*). One example only.

The well-marked structural characters of this species will perhaps render it recognizable by the above description, although made from a single example, which, as a rule, is to be avoided in so variable a genus as the present.

M. ovaticollis approaches closely in colour and pubescence *M. felix*, Kirsch, of Colombia; but nothing is said in the author's description regarding the peculiar rounded form of the thorax.

25. **Macrodactylus thoracicus.** (Tab. IX. fig. 7.)

Macrodactylus thoracicus, Kirsch, Berl. ent. Zeitschr. 1885, p. 218[1].

Hab. Panama, Volcan de Chiriqui (*Champion*).—South America, Ecuador[1].

A single male example from Chiriqui, agreeing with Kirsch's description and with an

example captured by Buckley in Ecuador, except that the femora and tibiæ and tarsal joints are tipped with black.

26. **Macrodactylus ——?**

Hab. Panama, Volcan de Chiriqui (*Champion*).

Also a single example (♂), evidently immature.

27. **Macrodactylus virens.** (Tab. IX. fig. 8.)

Angustus, saturate viridis vel cyaneus, fere glaber, sericeo-subopacus; antennis piceo-rufis, clava et pedibus nigris; clypeo valde elongato, antice angustato, apice recurvo-rotundato; corpore toto pilis sejunctis recumbentibus cinereis vestito; thorace mediocriter angulatim dilatato.

♂. Prosterni spina postcoxali mediocre, apice obtuso; ventris setis parcissimis, nigris, utrinque 1 vel 2.

Long. 9 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*), Zapotlan in Colima (*Höge*).

I have adopted from the Sallé collection Sturm's MS. name for this species.

28. **Macrodactylus murinus.** (Tab. IX. fig. 9.)

M. virenti proxime affinis; clypeo similariter angustato et apice reflexo; sed differt colore plumbeo-viridi, toto dense cinereo adpresso-pilosus.

Long. 9 millim.

Forma typica: *M. murinus* (Dugès, MS.). Pedes nigri.

Var. *M. subviridis* (Dugès, MS.). Pedes nigri, femoribus tibiisque basi rufis.

Hab. Mexico, Tupataro, Silao (*Sallé*), Tonila in Colima (*Höge*).

Intermediate states in the colour of the legs are shown in the Sallé collection, and both forms occur at Tonila.

ISONYCHUS.

Isonychus, Mannerheim, Mém. Soc. Nat. Moscou, vii. p. 69 (1829); Burmeister, Handb. der Ent. iv. 2, p. 42 (1855); Lacordaire, Gen. Col. iii. p. 247 (1856).

An exclusively American genus, like *Macrodactylus*, but apparently restricted to the tropical zone of the continent. Upwards of sixty species have been described, but as little attention has been paid to the extraordinary variation in the colours and markings which the species present, it is probable that many of them are not valid.

Burmeister says expressly that the legs offer no sexual differences, and other authors have failed to notice any. The differences, however, so far as regards the tibial spurs are similar to those of *Macrodactylus*, though not quite the same. The anterior tibiæ have a single spur in both sexes, and the females two on the four hinder legs, but in the males the hindmost tibiæ are destitute of spurs in most of the species, and armed with a single, long spur in others, and the middle tibiæ have two. Sexual differences exist also on the fifth and sixth ventral segments.

1. **Isonychus ocellatus.** (Tab. IX. figg. 10, 11, 12, 13.)

Isonychus ocellatus, Burm. Handb. der Ent. iv. 2, p. 46 [1].

♂. Ventris segmentum 5^{m} medio late deplanatum, subexcavatum, subtiliter corrugatum, nudum; segmenti 6^{i} apice cum pygidii apice elevato interdum verticali.

♀. Ventris segmentum 6^{m} (et 5^{i} apex) simplex, nudum, rufum.

Long. 10–13 millim.

Hab. Mexico [1], Puebla, Capulalpam, Toxpam, Juquila, Oaxaca (*Sallé*), Jalapa, Coatepec (*Höge*); Guatemala, Volcan de Fuego 6500 feet (*Champion*).

The head is generally dark, tending to brassy-black, and punctured; the rest of the integument castaneous or brown, clothed with ashy or dingy-ashy pile, and presenting a very variable dark brown design on the elytra. Burmeister describes only one state, which may be fairly taken as typical, the elytra having twelve large brown rounded spots, the two central ones of which are ring-shaped, or have a pale centre. The chief variations from this typical pattern are the following:—

1. The fuscous spots all ocellated; pile longer and coarser.—Puebla, Jalapa. (Tab. IX. fig. 11.)
2. The same reduced to thread-like rings.—Coatepec.
3. Spots coalescing to form two broad oblique belts.—Jalapa, Toxpam. (Tab. IX. fig. 12.)
4. Pile finer, leaving the striæ (partly geminated) visible; the brown spots paler and more rufous in colour, generally coalescing in two belts.—Capulalpam, Juquila.
5. Var. *I. piperitus*. Spots much reduced in number and size, or entirely absent; elytra sprinkled throughout with minute blackish spots.—Juquila, Oaxaca, Toxpam, Jalapa, Coatepec. (Tab. IX. fig. 13.)
6. Clothed with longer, light ashy pile; elytra with faint traces of two oblique dusky belts.—Guatemala.

Var. 5 is more numerously represented and more definite than the others, thus meriting a distinctive name.

2. **Isonychus pictus.** (Tab. IX. fig. 14, ♀.)

Isonychus pictus, Sharp, Journ. Linn. Soc., Zool. xiii. p. 131 [1].

Hab. Nicaragua, Chontales (*Belt* [1]); Costa Rica (*Van Patten*).

A Nicaraguan specimen is figured.

3. **Isonychus hirsutus.**

Oblongo-ovatus, nigro-æneus; antennis (clava nigra excepta), pygidio anoque obscure rufis, undique pilis elongatis erectis fulvis pubeque recumbente flavescente, vestitus; elytris utrinque fascia obliqua lata ante medium, macula transversa communi post medium plagisque vagis apicalibus, nigris recumbenti-pilosis.

Long. 13–14 millim.

♂. Ventris segmentum 5^{m} medio late depresso-planatum et crebre rugoso-punctatum, 6° (basi profunde transversim sulcato) pygidioque apice elevatis; tibiæ posticæ ecalcaratæ; intermediæ bicalcaratæ.

♀. Ventris segmenta 5^{m} apice et 6^{m} lævissima, rufescentia, 5^{m} valde elongatum.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Allied to *I. pictus* and *I. crinitus*, and apparently still more closely to *I. principalis*,

Burm., with which it agrees in the body being clothed with long hairs; but it differs from these species in the colours of the adpressed pile and in the markings of the elytra. The false subapical suture of the fifth ventral segment in the female is sharply marked, and the more deceptively resembles a true suture, as the greenish-ochreous coloured pile abruptly ceases there, leaving the apex and the large sixth segment glabrous.

Three examples—two males, one female.

4. Isonychus vittatus.

Isonychus vittatus, Burm. Handb. der Ent. iv. 2, p. 47 [1].

Hab. Mexico [1].

This species is not contained in our collections.

5. Isonychus tomentosus.

Isonychus tomentosus, Burm. Handb. der Ent. iv. 2, p. 48 [1].

Hab. Mexico [1].

I have not seen specimens of any species answering the above-cited description.

6. Isonychus chiriquinus.

Oblongus, minus convexus, obscure fuscus, subænescens, pilis recumbentibus (nec adpressis) pallidius fuscis undique vestitus, solum elytrorum interstitio 4° interdum cinereo-maculato; clypeo antice valde angustato, antice subtruncato, angulis obtusis, supra alveolato-punctato; elytris interstitiis alternis latioribus convexioribusque; antennis toto fulvo-rufis; pygidio sat dense umbilicato-punctulato.

♂. Ventris segmentum 5^{m} medio angustius triangulariter planatum et declive nec denudatum.

Long. 8–10 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—Colombia, Sierra Nevada de Santa Marta (*ex coll. Simons*).

Five examples from Chiriqui, all males. The single example from Santa Marta is larger (10 millim.), and has more even elytral interstices.

7. Isonychus aurantiacus.

Isonychus aurantiacus, Burm. Handb. der Ent. iv. 2, p. 50 [1].

Hab. Mexico [1].

Not contained in our collections.

8. Isonychus limbatus.

Isonychus limbatus, Burm. Handb. der Ent. iv. 2, p. 51 [1].

Hab. Mexico [1].

Also unknown to us. Burmeister described both the foregoing and his other Mexican species from Dupont's collection.

9. **Isonychus paradoxus.** (Tab. IX. fig. 15, ♂.)

Oblongus, minus convexus, ænescenti-fuscus, pilis brevibus adpressis fulvis passim interruptis vestitus, setulis brevibus suberectis intermixtis; antennis, femoribus tarsisque rufescentibus; clypeo sicut in *I. ocellato*, angulis rotundatis; thorace subtiliter crebre punctulato; elytris interstitiis alternis convexis, interstitiis planis 2°–4° et 8° maculis nonnullis fusco-nigris, velutinis, callo apicali valido; corpore subtus fere glabro, ventris segmentis basi nigricantibus, cinereo-maculatis; pygidio brevi, piloso, vitta mediana glaberrima.

Tibiæ 4 posteriores, sicut in *Hopliis* plurimis, serratis sed gracilioribus.

♂. Ventris segmentum 5^{m} medio transversim depressum, umbilicato-punctulatum; tibiæ posticæ apice unicalcaratæ.

Long. 11 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Two males only. The tarsal claws in this anomalous species are stronger and more curved, and the parts of the mouth more robust and prominent than in the other known members of the genus.

BARYBAS.

Barybas, Blanchard, Cat. Coll. Ent. i. p. 94 (1850); Lacordaire, Gen. Col. iii. p. 260 (1856).
Microcrania, Burmeister, Handb. der Ent. iv. 2, p. 26 (1855).

Burmeister (*l. c.* p. 536) shows that the first of Blanchard's two species, *B. variegatus*, Germ., is wrongly named, being an *Isonychus*, and thinks that his second, *B. nanus*, does not belong to the genus, but is synonymous with his *Hercitis pygmæa*. There is room to doubt the latter identification; and Blanchard's phrase, "ungues—posticorum —externo majore simplici interno fisso," may be regarded as sufficient to fix the genus, in spite of the incompleteness of the whole diagnosis. Lacordaire's definition fills up the lacunes in Blanchard's, but is some months posterior in date to the still better description of Burmeister.

The genus is peculiar to Tropical America, and numerous in species, though barely half a dozen are yet described. It is interesting as showing a relationship to the Hopliinæ.

1. **Barybas auritus.** (Tab. IX. fig. 16.)

Oblongus, fuscus sive castaneus, squamulis anguste lanceolatis fulvo-cinereis fere in vittas subcongestis vestitus; clypeo brevi, antice latissime truncato rectangulato, utrinque pone angulum sinuato genisque lobato-productis; thorace æqualiter convexo, lateribus simpliciter rotundatis, angulis posticis rotundatis, umbilicato-punctato; elytris umbone juxta-scutellari callisque apicalibus mediocribus, his squamis fasciculatis subtiliter discrete striguloso-punctulatis; pygidio eleganter umbilicato-punctato; antennis pedibusque rufescentibus.

Tibiæ anticæ ♂ bi-, ♀ tridentatæ.

Long. 6–7½ millim.

♂. Tarsi anteriores articulo basali apice intus spina recurva armato; pygidio æqualiter convexo.

♀. Tarsi anteriores inermes; pygidio inæquali, utrinque tuberoso.

Hab. Panama, David, Caldera in Chiriqui (*Champion*).

Distinguished from other described species by the peculiar shape of the clypeus in both sexes *.

2. **Barybas idiota.**

Oblongus, crassus, fuscus, aspere subrugose (thorace grossius, elytris subtilius) punctatus, squamis anguste lanceolatis cinereis vel fulvo-ochraceis vestitus, squamis adpressis interdum (præcipue apud pygidium) elevatis; clypeo brevissimo, cum genis rotundato; thorace valde et æqualiter convexo, lateribus late rotundatis (margine serrato), angulis posticis subrectis; elytris umbone callisque mediocribus; pygidio annulato-punctato.
♂. Tibiæ anticæ bidentatæ; tarsi articulo basali apice intus spina brevi: pygidio lateribus postice sulcatis.
♀. Tibiæ anticæ subtridentatæ (dente superiore lato parvo); tarsi inermes; pygidio latiore brevioreque, simplice.
Long. 8–9 millim.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*).—SOUTH AMERICA, Upper Amazons.

The clypeus, together with the genæ, is broadly rounded; it is reflexed and separated from the forehead by a distinct suture, forming a border to the head of equal width throughout.

Two examples only, both males, from Chontales. I have supplemented the description from females taken on the Amazons. In some examples, especially in those from the Upper Amazons, the scales are elevated, nearly vertically so on the thorax and pygidium, and congested in small spots on the elytra; but in others from the same localities they lie perfectly flat.

3. **Barybas oxygenys.**

Oblongus, convexus, fuscus, aspere punctulatus, squamis lanceolatis recumbentibus fulvis vestitus, elytris spatiis glabris; clypeo rotundato, genis acutis; thorace æqualiter convexo, lateribus rotundatis (margine integro), angulis posticis obtusis sed distinctis; antennis rufis; pedibus rufescentibus; tibiis anticis ♂ ♀ tridentatis.
♂. Tarsi antici articulo basali apice intus breviter spinoso.
♀. Tarsi antici articulo basali apice intus simplice.
Long. 6 millim.

Hab. PANAMA, Bugaba (*Champion*). Two examples only.

The clypeus is reflexed, and forms an anterior border to the head, which is much wider in the middle than at the sides. The genæ project in an acute angle close to the eyes.

* The following species has the same feature, but somewhat less developed:—

Barybas sublobatus.

Oblongus, castaneo-fuscus, squamulis (sive pilis) brevibus cinereis interrupte vestitus; clypeo brevi, antice late truncato obtusangulato, utrinque pone angulum leviter sinuato genisque late sublobatis; thorace æqualiter convexo, lateribus rotundatis, angulis posticis fere rectis, umbilicato-punctato; elytris umbone mediocri, callis apicalibus squamis fasciculatis, crebrius subtiliter punctato-strigulosis; pygidio creberrime umbilicato-punctulato; antennis pedibusque rufescentibus; tibiis anticis ♂ ♀ tridentatis. ♂. Tarsi anteriores articulo basali apice intus recte spinoso; pygidio æqualiter convexo. ♀. Tarsi anteriores inermes; pygidio planato, prope apicem medio tuberculis conicis approximatis duobus.
Long. 6–9 millim.

Hab. AMAZONS, Ega (*coll. Bates*).

PSEUDOSERICA.

Pseudoserica, Guérin, Voy. de la Coquille, Ent. p. 86 (1830).

Plectris, Serv. (partim), Blanchard, Cat. Coll. Ent. i. p. 125 (1850); Lacordaire, Gen. Col. iii. p. 260 (1856).

Philochlænia (partim), Burmeister, Handb. der Ent. iv. 2, p. 28 (1855) (nec *Philochlænia*, Blanch. 1850).

Among the numerous cases of involved and almost inextricable synonymy created by the independent publication of Burmeister's monograph of the Melolonthidæ, that resulting from the opposite view taken by him and Blanchard of the genus *Philochlænia* is perhaps the worst. Burmeister had been many years working at his monograph of this family, and Blanchard's descriptive catalogue having in the meantime appeared, he found the task of reconciling his work with that of his predecessor hopeless, and brought it out with a few synonymical notes only in the Appendix. Lacordaire's 'Lamellicornes' volume appeared too soon after Burmeister's publication for the revision which that patient and keen-sighted entomologist would otherwise, no doubt, have undertaken. *Philochlænia*, up to Blanchard's time, was a catalogue-name only, and although it then included more than one distinct generic type urgently in need of defining, this author unfortunately chose, as its first or typical section, species which make it virtually a synonym of the much older genus *Plectris*. A generic name which it would have been useful to retain thus falls through, unless the extreme inequality and separate movability of the tarsal claws of the first section should hereafter render it desirable to retain *Philochlænia* as a genus distinct from *Plectris*. Burmeister's genus *Philochlænia*, on the other hand, consists chiefly of species wrongly included in *Plectris* by Blanchard. The majority of these seem to me to form a natural genus allied to *Plectris* in facies and in the relative length of the basal joint of the hind tarsi; but differing in the claws being all equal and more or less divaricated, and in the elytra having a distinct membranous border, the border being at most a fine hair-fringe in *Plectris*. They all have a sinuated clypeus, and the labrum so deeply sinuated as to be bilobed—characters which all Burmeister's *Philochlæniæ* do not possess, for his *P. chalcea* (=*Alvarinus submetallicus*, Blanch.), and possibly most of his Section I., have a rounded clypeus and small arcuate-emarginate labrum. The posterior tibiæ have two apical spurs in both sexes. This group is congeneric with the *Pseudoserica marmorea* of Guérin, and it will be in accordance with the rules of priority, therefore, to resuscitate Guérin's name in re-establishing the genus on a broader basis.

I have seen about a score species belonging to *Pseudoserica*, very few of which answer the description of the twenty or thirty described by Blanchard and Burmeister. They are peculiar to Tropical America.

1. **Pseudoserica micans.** (Tab. IX. fig. 17.)

Philochlænia micans, Kirsch, Berl. ent. Zeitschr. 1885, p. 217 [1].

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet, David (*Champion*).—SOUTH AMERICA, Ecuador [1].

Five examples, agreeing with Kirsch's excellent description; but two of them only are of the colour he particularizes, viz.:—"braunroth, Kopf und Halsschild dunkler." The others are rich purple coppery-brown, silky on the elytra and metallic in certain aspects on the thorax.

A specimen from the Volcan de Chiriqui is figured.

2. **Pseudoserica æruginosa.**

Philochlænia æruginosa, Burm. Handb. der Ent. iv. 2, p. 32 [1].

Hab. NICARAGUA, Chontales (*Belt*).—SOUTH AMERICA, Colombia [1].

One example. Differs from *P. micans* by its brassy-brown colour, the thorax destitute of pruinose bloom, and the punctuation much finer and closer—in all of which points it agrees with Burmeister's description.

Other closely allied species, or varieties, from Ecuador and Venezuela, are known in collections.

3. **Pseudoserica setisparsa.**

Oblongo-ovata, castaneo-fusca ænescens, setis reclinantibus albidis conspersa; capite confluenter punctato; clypeo subprofunde sinuato, lateribus utrinque leviter sinuatis; thorace post medium angulatim dilatato, sat crebre (cum scutello) umbilicato-punctato, marginibus lateribus crenulatis; elytris ruguloso-punctatis, substriatis; corpore subtus longius piloso cum pygidio dense umbilicato-punctato; tarsis omnibus (♂?) subtus dense pilosis, posticis articulo basali quam 2° et 3° conjunctis longiore; tibiis anticis 3-dentatis; antennis (9-articulatis) pedibusque testaceo-rufis.

Long. 8 millim.

Hab. GUATEMALA, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*).

Two examples only. The short whitish setæ are of uniform length on the thorax and elytra, and without mixture of longer setæ in rows or otherwise: all are reclined backwards. Six or seven striæ on each elytron are indicated by the slight convexity of the corresponding interstices *.

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* A very similar species, widely spread over the Amazons valley, is liable to be confounded with the above, and may be here described in order that the differences of the two, and of two other common species, may be pointed out:—

Pseudoserica amazonica.

Oblongo-ovata, cuprascenti-fulvo-fusca, interdum viridi-æneo tincta, setulis reclinantibus (pilis sparsis multo longioribus intermixtis) fulvis, thorace densius longipiloso; capite confluenter punctato; clypeo subprofunde sinuato, lateribus utrinque leviter sinuatis; thorace post medium rotundato-dilatato, crebre sed discrete punctulato, punctulis singulis e punctulis minoribus compositis; elytris crebre subruguloso-

4. **Pseudoserica integrata.** (Tab. IX. fig. 18.)

Oblongo-ovata; ♂ purpureo-fusca, opaca, ♀ castaneo-fusca, interdum ænescens, nitida; setulis inclinatis separatis vestita, elytris setulis longioribus sparsis fasciculoque apud callum apicale; capite grosse confluenter punctato, clypeo perparum sinuato, labro medio usque ad clypei marginem excavato; thorace et elytris ♂ discrete punctulatis, ♀ grossius subconfluenter punctatis, apud thoracem ♂ punctis e punctulis minoribus compositis; corpore subtus pygidioque umbilicato-punctatis, metasterno medio breviore, polito; tarsis posticis articulo basali mediocriter elongato, quam 2° et 3° conjunctis paullo longiore; pedibus rufescentibus. Antennæ rufo-testaceæ, 9-articulatæ, clava ♂ valde elongata. Tibiæ anticæ ♂ ♀ bidentatæ.
Long. 8 millim.

Hab. Panama, Bugaba (*Champion*). Numerous examples.

Subfam. *DIPLOTAXINÆ.*

This group is distinguished from the "Macrodactylinæ" (with which it agrees in the free labrum and abdominal segments and in the conical, obliquely exserted, anterior coxæ) by the nearly equal lengths of the ventral segments 2–5. Species in which the fifth ventral segment is a little the largest are found in *Liogenys* only, which is thus shown to be a connecting-link with the "Macrodactylinæ." The obliteration of the suture between the fifth ventral and the penultimate dorsal segment, adduced as a distinguishing character by Leconte, holds good with American genera, although there is a trace of a suture in some examples (not in others) of *Liogenys palpalis* *. In all, the thorax in front has a membranous margin, and the elytra a very narrow similar margin.

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punctulatis vix costulatis; corpore subtus pygidioque annulato-punctatis; tarsis subtus dense pilosis, posticis articulo basali tribus sequentibus conjunctis fere æquali; tibiis anticis 3-dentatis; antennis (10-articulatis) pedibusque rufo-testaceis.
Long. 8–11 millim.

Hab. Amazons, ubique.

The additional antennal joint, the fifth, is very small. The species differs from the equally 10-jointed *P. flavohirta*, Blanch., which is apparently still more widely distributed in Equatorial South America, by its smaller size (*P. flavohirta* being 12 to 14 millim.) and the finer and much less dense sculpture; both differ from *P. setisparsa* in the numerous long erect hairs (scattered partly in lines on the elytra and forming a rather dense brush on the thorax), which rise far above the short reddish-tawny subrecumbent pile. In *P. amazonica* and *P. flavohirta* the first joint of the hindmost tarsi is equal in length to joints 2–4, and about double the length of the second; in the following species it is still longer absolutely and relatively:—

Pseudoserica longitarsis.

Inter *P. flavohirtam* et *P. amazonicam*; ambobus differt thorace densissime (haud confluenter) punctato, elytrorum setis et pilis magis cinereis tarsisque posticis articulo basali longissimo, cæteris 4 conjunctis fere æquali; capite thoraceque viridi- vel cupreo-æneis; cætera sicut in *P. amazonica*.
Long. 12–13 millim.

Hab. Upper Amazons.

* The obliteration of the suture is not peculiar to the Diplotaxinæ; it is seen in some Macrodactylinæ, e. g. *Ancistrosoma*.

Liogenys is so closely linked to *Diplotaxis* by finely graduated forms and the structure is so nearly identical, that there is no reason for the sharp separation of the two genera as hitherto made in classifications of the Melolonthidæ.

LIOGENYS.

Liogenys, Guérin, Voy. de la Coquille, Zool. ii., Col. p. 84 (1838); Burmeister, Handb. der Ent. iv. 2, p. 12 (1858); Lacordaire, Gen. Col. iii. p. 268 (1856).

An exclusively American genus, extending from Mexico to Chili, but apparently not continued into temperate North America. About twenty species have been described.

1. **Liogenys quadridens.**

Melolontha quadridens, Fabr. Ent. Syst. Suppl. p. 131.
Liogenys quadridens, Burm. Handb. der Ent. iv. 2, p. 14[1].
? *Liogenys quadridentatus*, Blanch. Cat. Coll. Ent. i. p. 168[2].

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—South America, Colombia and Guiana[1], Amazons, Monte Video[2].

2. **Liogenys morio.**

Liogenys morio, Burm. Handb. der Ent. iv. 2, p. 16[1].

Hab. Central America[1].

I have seen no species answering Burmeister's description.

3. **Liogenys macropelma.** (Tab. IX. fig. 19.)

Oblongus (♀ magis ovata), minus convexus, niger vel castaneus, supra et subtus nudus nitidus, subtus et pedibus rufo-piceis, antennis testaceo-fulvis; sat grosse disperse punctatus; capite mox ab oculis angustato, clypeo late obtuse bidentato, cum fronte concavo; elytris geminato-punctato-striatis; pygidio magno, subplano, apice late subtruncatim rotundato, grosse sed haud dense punctato; ventris segmentis 2°–5^{m} longis, fere æqualibus, 6° mediocriter elongato; antennarum clava hirsuta.

♂. Pedes elongati, graciles; tarsi postici graciles, subtus dense hirsuti, articulo 1° sequente plus quam dimidio breviore; tarsi quatuor anteriores articulis 2°, 3° et 4° basi paullo dilatatis, 1°–4^{m} subtus palmatis, densissime pilosis.

♀. Pedes et tarsi mediocriter elongati, horum articulis subtus minus dense pilosis, haud dilatatis.

Long. 10–11 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Numerous examples.

4. **Liogenys pubisternis.** (Tab. IX. fig. 20.)

L. palpali similis et affinis, convexus, testaceo-rufus, supra glaber nitidus, sternis femoribusque longissime fulvo-hirtis; capite ab oculis rotundato-angustato; clypeo producto, late bidentato, supra concavo sparsim punctato; thorace disperse punctato; elytris sat crebre punctulatis utrinque costulis angustis parum elevatis quatuor. Tarsi postici articulo 1° sequente paullo breviore.

♂. Tarsi gracillimi, subtus pilosi; anticis articulis 2°–4^{m} mediocriter dilatatis, subtus palmatis densissime pilosis; intermediis perparum dilatatis.

Long. 14 millim. ♂.

Hab. Mexico (*Sallé, ex coll. Sturm*). Two male examples only.

So closely resembling the Chilian *L. palpalis* (Eschsch.) that if it were not for the much narrower dilatation of the male tarsal joints I should have little hesitation in referring it to that species. The form, colour, pubescence, punctuation, and shape of the head are exactly as in ordinary examples of *L. palpalis*; but the hind tarsi are longer, much thinner, and less hairy beneath; and the dilated second to the fourth and the base of the first joints of the two anterior pairs are much narrower than long, the fourth of the anterior and the second to the fourth of the intermediate pair further differing in being only a little broader than undilated joints.

5. **Liogenys pubereus.** (Tab. IX. fig. 21, ♀.)

Sat elongato-oblongus, undique pilis brevibus discretis inclinatis fulvis; nigro-æneus vel (immaturus?) castaneus, æneo-tinctus, antennis et tarsis rufo-piceis, illis clava fulva; capite lato, crebre grosse punctato; clypeo parum angustato, antice late subsinuatim truncato, angulis acutis; thorace transverso, dense punctato, angulis posticis apice acutis; elytris sat dense regulariter punctatis, geminato-striatis sed costis haud elevatis, seriatim punctatis; pygidio parvo, grosse punctato; sternis abdomineque punctatis, medio lævioribus; tibiis anticis bidentatis.

♂. Tarsi 4 antici articulis 1°–4^{m} latioribus, oblongis, subtus palmatis densissime pilosis; cæteris subtus minus dense pilosis. Pedes toti pilosi. Ventris segmentum 6^{m} interdum latens.

♀. Tarsi 4 antici articulis 1°–4^{m} subtus dense pilosis sed haud dilatatis; cæteris subtus minus dense pilosis. Pedes toti sparsim setosi nec pilosi. Ventris segmentum 6^{m} conspicuum sed breve.

Long. 12–13 millim.

Hab. Mexico, Cordova, Etla, Peras, Oaxaca (*Sallé*), Vera Cruz (*Höge*).

Var. ♀. Cuprascens; sparsius punctatus, fere nudus (? detritus).

Hab. Mexico, Panislahuaca (*Sallé*).

Numerous examples in the Sallé collection are named *Liogenys cribraticollis*, Reiche (MS.), a name which I do not adopt, as it might lead to confusion with *Diplotaxis cribraticollis*, Blanch., *L. pubereus* being an aberrant *Liogenys* with characters showing an affinity with *Diplotaxis*.

A specimen from Etla is figured.

6. **Liogenys (?) —— ?**

Hab. Mexico, Yolos (*Sallé*).

A single female example without pubescence above (? abraded), and very coarse and sparse sculpture.

7. **Liogenys (?) —— ?**

Hab. Mexico, Cordova (*Sallé*).

Of this there is also only a single female example. It is of a bright metallic colour and certainly distinct from *L. pubereus*, but its genus cannot be determined without a knowledge of the other sex.

DIPLOTAXIS.

Diplotaxis, Kirby, Fauna Bor.-Amer. iv. p. 129 (1840); Lacordaire, Gen. Col. iii. p. 275 (1856); Leconte, Journ. Acad. Nat. Sc. Phil. 2nd ser. iii. p. 265 (1856).

A genus apparently confined to North America, represented by numerous species in the United States and Mexico, but not extending further south than Costa Rica, though one species occurs in the West Indies. About forty species have been described.

I. *Clypeus (præcipue in ♂) quadratus, antice late sinuatus; corpore recumbenti-cinereo-setoso.*

1. **Diplotaxis pilifera.** (Tab. IX. fig. 22, ♂.)

Liogenys pilifera, Burm. Handb. der Ent. iv. 2, p. 16[1].

Hab. Mexico[1], Iguala in Guerrero (*Höge*).

The tarsi are remarkably short in both sexes, fringed beneath with hairs, the joints 1–3 of the two anterior pairs densely hairy. The sixth ventral segment is conspicuous in both sexes.

2. **Diplotaxis clypeata.** (Tab. IX. fig. 23.)

Angustior, viridi-schistacea vel cuprea, elytris interdum (immatura?) castaneis, breviter albido-setosis, setis in elytris (sicut in *D. pilifera*) lineatim ordinatis, antennis nigris, tibiis tarsisque plerumque testaceo-rufis; creberrime punctata, subopaca; thorace sat parvo, antice angustato, angulis posticis rotundatis; elytris costis parum elevatis, punctatis; ventris segmento 6° parvo; tibiis anticis tridentatis; tarsis omnibus sat gracilibus, unguibus dente apicali inferiore nec latiore nec magis curvato.

♂. Clypeus magis quadratus, angulis anticis subproductis. Tarsi subtus sparsim breviter setosi. Segmenta ventralia medio setis rigidis armata.

♀. Clypeus trapezoideus. Tarsi paullo breviores, subtus sparsissime setosi.

Long. 6–7 millim.

Hab. Mexico, Yolos (*Sallé*).

Named *Philochlœnia clypeata* (Deyr., MS.) in the Sallé collection; but the broadly arcuated labrum and the non-elongated fifth ventral segment show that it does not belong to the same subfamily even as *Philochlœnia*. The short bristly clothing and (in the male) rather elongate and quadrate clypeus of this and the preceding species, though opposed to the typical forms of *Diplotaxis*, cannot suffice to distinguish them generically from that genus.

The totally different clothing of the soles of the male tarsi and the length of the joints in species so very closely allied in other respects as *D. clypeata* and *D. pilifera* show what abrupt variations have been at work in the group.

II. *Clypeus (præcipue in ♂) trapezoidalis; corpore supra glabro, interdum hirto.*

3. **Diplotaxis ænea.**

Diplotaxys ænea, Blanch. Cat. Coll. Ent. i. p. 172 [1].
Liogenys pauperata, Burm. Handb. der Ent. iv. 2, p. 16 [2].

Hab. Mexico, Vera Cruz [1 2], Capulalpam, Cordova, Silao, Cuernavaca (*Sallé*), San Juan del Rio, Esperanza, Pachuca in Hidalgo (*Höge*), Guanajuato (*Sallé, Höge*).

Usually dark brassy-green or bluish in both sexes, with the antennæ (except the club) reddish; but varieties occur (at Silao and Guanajuato) in which the elytra and legs are more or less rufous, and the female in some cases wholly dull reddish-brown. The brown variety of the female was cited by Burmeister as synonymous with *D. simplex* (Blanch. *l. c.* p. 172), but this appears doubtful.

The clypeus is large, as in Section I.; but is trapezoidal and not quadrate in the male, although the anterior angles are more acute owing to the sinuation of the front edge and a slighter sinuation of the lateral margin near the angle. The sixth ventral segment is exposed in both sexes, and the male tarsi (especially the four anterior), though not at all dilated, are fringed with hairs beneath, as correctly described by Burmeister. The thorax is always finely and densely punctured; and the elytra a little more coarsely and subrugosely punctured, but with the punctures distinct.

4. **Diplotaxis cribraticollis.**

Diplotaxys cribraticollis, Blanch. Cat. Coll. Ent. i. p. 171 [1].

Hab. Mexico [1], Tepansacualco, Yolos, Guanajuato (*Sallé*).

According to the Sallé collection, this is the largest of a small group of Mexican and Guatemalan species, of uniform reddish-testaceous (sometimes a little darker) colour, in which the males have a broad trapezoidal clypeus with prominent angles and sinuated front edge; the sides of the clypeus a little irregular and the surface concave and more coarsely punctured than the forehead; the thorax strongly rounded behind the middle and narrowed thence to the head, with rounded hind angles; and the tarsi in the male fringed beneath with fine hair.

The Sallé specimens are 10–11 millim. long (Blanchard gives 10 millim.); the flat interstices between the geminated striæ are not "lævibus" as Blanchard states, but have a row of punctures; and the anterior tibiæ are not "bidentatis," but show a distinct though small third upper tooth. If they really belong to Blanchard's species, that author's description of the thorax as "dense subtiliterque punctato" is not very fitting, as the punctures, though finer than those of the elytra, are tolerably widely scattered over the surface.

5. **Diplotaxis trapezifera.** (Tab. IX. fig. 24, ♂.)

D. cribraticolli quam maxime affinis; differt ♂ clypeo longiore et magis angustato, anguste trapeziformi, lateribus subrectis, apice sat angusto, sinuato. Toto rufo-testacea, supra nuda; clypeo concavo, grossissime punctato, fronte subtilius punctata; thorace angulis posticis rotundatis, antice angustato; elytris discrete punctatis, geminate-punctato-striatis, costis haud elevatis, subtiliter et sparsim seriato-punctatis; pygidio propygidioque grosse et profunde discrete, ventre sternoque medio subtilius disperse, punctatis.

Tarsi ♂ subtus fimbriato-pilosi; ♀ vix pilosi clypeoque angulis obtusis. Ventris segmentum 6^{m} breve, interdum (retractum) margine tantum perspicuo.

Long. 7–8½ millim.

Hab. Mexico, Ventanas, Presidio, Tres Marias Islands (*Forrer*), Cordova, Tepanistlahuaca, Juquila, Puebla, Yucatan (*Sallé*), Villa Lerdo, Tejeria, Guanajuato, Amecameca, Cuernavaca, Jalapa, Chilpancingo in Guerrero (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), near the city (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*).

In all the numerous examples of the male the sides of the head form a straight, sometimes slightly incurved, line from the ocular canthus to the apical angle of the rather narrow trapeziform clypeus. Gradations occur between this simple outline and a form in which the sides are angularly flexuous; of these the following two varieties are distinguishable:—

Var. 1. *D. consentanea* (Chevr. in coll. Sallé).—♂. Gracilior; clypei lateribus juxta apicem sinuatis, dentis apicalibus acutioribus; fronte medio antice plerumque concava.

Hab. Mexico, Orizaba, Guanajuato, Puebla, Etla (*Sallé*), Mexico city (*Flohr*), Chihuahua city, Durango city, Jalapa (*Höge*); Nicaragua, Chontales (*Janson*).

Var. 2. *D. denticeps.*—♂. Clypei lateribus juxta apicem sinuatis et postea in dentem latum obtusum dilatatis.

Hab. Mexico, Salazar, Toluca, Durango city (*Höge*), Mexico city (*Flohr*, *Höge*).

This variety resembles much *Liogenys quadridens* (Fabr.); the clypeus, however, is much longer and the lateral dentiform dilatation does not form a long sharp tooth.

A further variety, differing in colour only from the typical *D. trapezifera*, but sometimes showing a slight lateral sinuation near the apical angle of the clypeus, is:—

Var. 3. *D. bicolor.* Supra castaneo-fusca (thorace, scutello elytrorumque limbo interdum rufis), subtus rufo-testacea.

Hab. Mexico, Yolos, Peras, Oaxaca (*Sallé*).

The species varies also in a rather important structural character, viz. the form of the lower apical tooth of the claws: in the vast majority of specimens this is, as in most other species, broader (especially at the apex) and more curved than the upper, but in others it is gradually tapering, like the upper tooth. Examples of this variation

are from Presidio and Tejeria, and offer no other character to distinguish them from the ordinary form of the species.

A typical male specimen from Jalapa is figured.

6. Diplotaxis nigriventris.

D. trapeziferæ exemplis minoribus similis, sed differt colore castaneo-fusco, subtus fusco-nigro, pedibus castaneo-rufis; clypeo minore, apice sat profunde sinuato; corpore subtus pygidioque undique grosse et profunde sed discrete punctatis.

Long. $6\frac{1}{2}$ millim.

Hab. Mexico, Presidio (*Forrer*).

Evidently more distinct from the typical *D. trapezifera* than any of the varieties described above. The clypeus is not quite so long, and is rather angularly sinuated on its front edge. There is little or no difference in the form of the thorax or in the sculpture of the upperside; but the underside is thickly strewn with large circular punctures.

7. Diplotaxis nitidicollis.

Diplotaxys nitidicollis, Blanch. Cat. Coll. Ent. i. p. 171 [1].

Hab. Mexico [1]; Guatemala (*Sallé*), Capetillo (*Champion*); Costa Rica, Volcan de Irazu (*Rogers*).

Three examples in the Sallé collection labelled *D. nitidicollis*, Blanch., agree fairly well with the description. The clypeus is short and broad, trapezoidal, with the front edge sinuated and the angles slightly prominent but rounded and each side towards the genæ broadly and angularly sinuated. In the male the pygidium is flat, and the sixth ventral segment exposed; in the female it is convex, and the sixth segment concealed.

8. Diplotaxis poropyge.

Oblonga, convexa, erecte fulvo-pilosa, castanea interdum cuprascens, subnitida; capite alveolato-punctato; clypeo brevi, trapezoidali, angulis latis obtusis sed prominulis, lateribus paullo sinuatis; thorace grosse punctato, angulis posticis fere rotundatis; elytris sat dense et profunde sed discrete punctatis, interstitiis suturalibus et costalibus æqualiter seriatis, costis haud elevatis; propygidio et pygidio grossissime alveolatis, corpore subtus grosse discrete punctato, pygidio utroque sexu parvo subrotundato; unguibus normalibus.

Long. 9–10 millim.

Hab. Mexico, Cordova, Chiapas (*Sallé*); Guatemala, San Gerónimo, Paso Antonio, Mirandilla (*Champion*).

The punctuation of the elytra is peculiar, the row of punctures along the sutural interstice and on the usual costæ being as strong and close as the punctured striæ limiting the costæ, the latter being only faintly indicated.

9. Diplotaxis crinigera.

D. poropygi proxime affinis, minor, castaneo-fulva, nitida, pilis erectis fulvis undique et densius quam in *D. poropyge* vestita; clypeo antice lateribusque fortius sinuatis; thorace valde differt densius et subtilius punctato, angulis posticis fere rectis medioque angulatim dilatato; pygidio et propygidio grosse confluenter punctatis.

Long. $7\frac{1}{2}$–8 millim.

Hab. GUATEMALA, near the city (*Champion*).

Two examples only.

10. Diplotaxis corrosa.

D. æneæ similis, sed minus angusta, postice dilatata, rugoso-punctata etc. Obscure viridi-ænea, parum nitida, grosse confluenter vel ruguloso-punctata, postice interdum brevissime griseo-setosa; elytris lateribus setis longis rigidis griseis fimbriatis; clypeo trapezoidali, angulis anticis (in ♂ acutius) angulatis, genis paullulum rotundatis; thorace post medium rotundato-dilatato, angulis posticis valde obtusis, spatio discoidali lævi; elytris costulis duabus sat convexis; pygidio grossissime et densissime punctato; ventre minus grosse et dispersius punctato, griseo-setoso; tarsis rufo-piceis; antennis palpisque nigris.

Long. $6\frac{1}{2}$–7 millim.

Hab. MEXICO, Alvarez Mountains (*Dr. Palmer*).

Var. *D. pachucana.* Elytra plerumque vitta lata utrinque rufa. (Tab. IX. fig. 25.)

Hab. MEXICO, Pachuca in Hidalgo (*Höge*). A large number of examples.

Apparently allied in some respects to *D. rugosipennis*, Blanch., which has, however, the antennæ, palpi, legs, and pygidium red. The males have not finely fimbriated anterior tarsi as in *D. ænea*. The colour is uniform. We figure an example of the variety from Pachuca.

11. Diplotaxis coriacea.

Angusta, æneo- vel cupreo-fusca, dense et sat longe griseo-pilosa; capite parvo, clypeo trapezoidali supra concavo, antice valde sinuato, discrete (fronte dense) punctato; thorace longe post medium rotundato-dilatato (angulis rotundatis) deinde antice valde angustato, dense æqualiter punctato; elytris dense subrugulose punctatis, costulis vix perspicuis; pygidio densissime, ventre paullo sparsius, grosse punctatis; palpis antennisque rufis; pedibus piceo-rufis; tibiis anticis acute 3-dentatis.

Long. $6\frac{1}{2}$–8 millim.

Hab. MEXICO, Presidio and Ventanas (*Forrer*), Cordova (*Sallé*).

The pubescence in well-preserved examples is tolerably long, slanting, dense, and regular over the whole surface from the forehead to the pygidium inclusive; on the underside it is abundant, but more irregular in length. The single example from Cordova in the Sallé collection (bearing the MS. name *Diplotaxis coriacea*, Klug) is more brassy and has the pubescence shorter (partly abraded) than Forrer's specimens from more northern localities.

The head is not very different in shape (comparing examples of the same sex together) from that of *D. ænea*; but the clypeus appears to be a little narrower, and more narrowed in front, with sharper apical angles.

12. **Diplotaxis** ——.

Hab. North America, Arizona.—Mexico, Northern Sonora (*Morrison*).

Sent by Morrison as *D. puberula*, Lec., which appears to be an erroneous determination. *D. puberula* is a Texan species, differing in form and sculpture from Morrison's insect.

13. **Diplotaxis parvula.**

Diplotaxis parvula, Burm. Handb. der Ent. iv. 2, p. 264[1].

Hab. Mexico[1], Juquila (*Sallé*).

A glabrous and shining pitchy-black species, with short and broad trapezoidal, unsinuated, very coarsely punctured clypeus, the forehead depressed in the middle, and sparingly punctured thorax, pygidium, and abdomen. The sutural interstice of the elytra is minutely and rather thickly punctured.

14. **Diplotaxis sinuaticeps.**

D. parvulæ proxime affinis, differt colore ænescenti-nigro, abdomine crebrius et grossius pygidioque grossissime alveolatim punctatis. Oblongo-ovata, ænescenti-nigra, nitida, palpis et antennis pallide rufis, pedibus rufo-castaneis; supra glabra, subtus cum pygidio parum dense fulvo-pilosa; clypeo brevi et lato trapezoidali, apice truncato, vel (♀?) rotundato, grosse punctato, sutura frontali argute impressa medio angulata ibique fronte leviter impressa; thorace lato, mox pone medium mediocriter rotundato-dilatato, angulis posticis obtusis sed distinctis, supra discrete punctato; elytris subconfluenter sed haud dense punctatis, costis distinctis parum elevatis; pygidio parvo, grossissime alveolato, longe erecte piloso; propygidio ventreque lateribus dense et grosse punctatis, medio ventre læviore; tibiis anticis valide tridentatis; ventris segmento 6° exserto.

Long. $6\frac{1}{2}$–8 millim.

Hab. Mexico, Jalapa, Vera Cruz (*Höge*), Playa Vicente (*Sallé*).

The sutural interstice of the elytra has only a single row of minute punctures. Many examples from Jalapa and Vera Cruz, and a single one from the Sallé collection; the last named is castaneous in colour, probably from immaturity. I received this species many years ago from Paris under the MS. name *D. sinuaticeps*, Reiche. The name cannot refer to the outline of the clypeus, but to the frontal suture.

15. **Diplotaxis juquilensis.**

Elongato-oblonga, rufo-castanea, supra cupreo-fusca, nitida, glabra; clypeo brevi et lato trapezoidali, angulis rotundatis, antice vix sinuatis, genis paullo rotundato-dilatatis, supra grosse, fronte subtilius, punctatis; thorace brevi et lato, antice utrinque (præcipue in ♂) marginato, prope medium dilatato, lateribus antice sinuatis, angulis anticis acutis, posticis distinctis sed obtusis, supra sat grosse et discrete hic illic subconfluenter punctato; elytris elongatis, postice haud dilatatis, sat crebre et grosse subconfluenter punctatis, punctis plerumque transversis, costis angustis parum punctatis; pygidio grossissime, ventre sparsius, confluenter punctatis; tibiis anticis ♂ bidentatis, ♀ dente 3° parvo; tarsis subtus ♂ dense pilosis; unguibus posticis profunde fissis, dente inferiore vix breviore aut latiore.

Long. 7–8 millim.

Hab. Mexico, Juquila (*Sallé*). Three examples.

In the male the apex of the elytra projects beyond the pygidium. The outline of the clypeus is very similar to that of the female of *D. nitidicollis.*

16. **Diplotaxis atramentaria.**

Oblonga, convexa, piceo-nigra; subtus piceo- vel castaneo-rufa, glabra, subtilissime alutacea, sericeo-opaca; antennis palpisque testaceo-rufis; capite dense nec grosse subalveolato-punctato, sutura frontali valde flexuosa; clypeo brevi, lateribus valde convergentibus, subrotundatis (♀?), apice truncato (♂?), cum angulis breviter dentatis; thorace prope medium sat fortiter dilatato, antice recte postice rotundatim angustato, angulis anticis acutis, posticis obtusis sed distinctis, supra minute distanter punctato; elytris disperse subtilius punctatis, costis latis vix elevatis, interstitio suturali pluripunctulato; pygidio profunde discrete, ventre dispersius, rotundato-punctatis; tibiis anticis valide tridentatis; unguibus normalibus (fissis dentibus subæqualibus).

Long. 9–10 millim.

Hab. Mexico, Peras (*Sallé*), Villa Lerdo in Durango, Cuernavaca (*Höge*).

Named *D. atramentaria* (Deyr. MS.) and *D. ruficornis* (Sturm, MS.) in the Sallé collection. Many examples.

The supposed female differs from the male, apart from the much shorter clypeus, in the large punctures on the sides and apex of the ventral surface being much fewer in number, and in the lower tooth of the claws being a little broader and more curved.

17. **Diplotaxis arctifrons.**

Oblonga, nigra, subnitida, supra glabra; clypeo mediocriter elongato, antice valde flexuoso-angustato, apice reflexo, breviter sinuato-truncato, ♂ acutius, ♀ obtusius bidentato, toto capite dense punctato, palpis antennisque testaceo-rufis; thorace (elytris haud angustiore) transverso, medio late dilatato, discrete haud grosse punctato, angulis anticis rectis, posticis obtusis sed distinctis; elytris grossius subdisperse punctatis, costis vix punctulatis; pygidio et ventre grosse sparsim punctatis; unguibus fissis, dente inferiore paullo breviore.

Long. 6–7½ millim.

Hab. Mexico, Durango city (*Höge*). A good series of examples.

18. **Diplotaxis ——?**

Hab. Mexico (*Sallé, ex coll. Sturm*).

An example of this apparently very distinct species, allied to the preceding, but of metallic colours, is contained in the Sallé collection; it is labelled *D. æneipennis*, Sturm, MS.

19. **Diplotaxis ——?**

Hab. Mexico, Playa Vicente (*Sallé*).

One specimen of a species also apparently distinct.

20. **Diplotaxis (?) ——?**

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

A single example, apparently female, of a species perhaps belonging to this genus, but possibly a *Liogenys*.

21. **Diplotaxis metallescens.**

Oblongo-ovata, glabra, nigro-ænea, subnitida; antennis, palpis et tarsis rufo-testaceis; capite crebre rotundato-punctato, sutura frontali lævi; clypeo breviter trapezoidali, angulis rotundatis, margine antico leviter sinuato; thorace discrete sed sat dense profunde punctato, post medium dilatato, angulis posticis obtusissimis; elytris sat dense profunde punctatis, costis haud elevatis valde serie-punctatis, interstitio suturali multipunctulato; pygidio convexo, setoso, grossissime alveolato-punctato, abdomine grosse sat dense (medio læviore) punctato; unguibus normalibus.

Long. 8–9 millim.

Hab. Mexico, Tepanistlahuaca (*Sallé*).

Three examples.

22. **Diplotaxis —— ?**

Hab. Mexico, Parada (*Sallé*).

A single example of a species apparently allied to the preceding.

23. **Diplotaxis popino.**

Diplotaxis popino, Casey, Contrib. to the Descriptive and Systematic Coleopterology of N. America, part ii. p. 179[1].

Hab. North America, Arizona[1].—Mexico, Northern Sonora (*Morrison*).

III. *Clypeus brevis, rotundatus.*

24. **Diplotaxis simplex.**

Diplotaxys simplex, Blanch. Cat. Coll. Ent. i. p. 172[1].

Oblongo-ovata, supra glabra, nitida, piceo-nigra vix metallescens, vel plus minusve rufo-testacea; clypeo brevi, late rotundato, apice perparum sinuato, supra transversim convexo, creberrime punctato, sutura frontali valde impressa, medio angulata ibique fronte (sparsius et subtilius punctata) concava; thorace disperse haud grosse punctato, medio subangulatim dilatato, angulis posticis obtusis sed distinctis; elytris sat disperse punctatis, costis haud elevatis sparse minute seriato-punctatis; pygidio grossissime subalveolatim punctato, rigide piloso; subtus lateribus grosse punctato; unguibus profunde fissis, dente inferiore latiore valde curvato; tibiis anticis 3-dentatis.

Long. 7–8 millim.

Hab. Mexico[1], Puebla, Orizaba (*Sallé*), Jalapa, Vera Cruz (*Höge*).

This insect bears the name of *D. simplex*, Blanch., in the Sallé collection, and is probably that species, though the description is too vague to determine the point satisfactorily. As some help towards identifying the insect, which is probably common in collections, I have redescribed it.

25. **Diplotaxis hebes.**

D. simplici simillima, sed differt unguibus dente inferiore submediano et brevi apice subtruncato. Oblonga, convexa; clypeo haud transverse convexo, plano, brevi, rotundato, apice fortius sinuato; capite toto fere æqualiter discrete sat fortiter punctato; thorace brevi, prope angulos posticos distinctos subrectos impresso, paullo grossius quam in *D. simplici* punctato; elytris profundius punctatis, costis parum distincte punctulatis; pygidio grosse alveolato-punctato, ventre medio fere lævi.

Long. $7\frac{1}{2}$ millim.

Hab. Mexico, Ciudad in Durango (*Forrer*), Toluca (*Sallé*).

Three examples. The one from the Sallé collection is labelled *D. simplex*, Blanch., but is certainly different specifically from other three examples in the same collection bearing that name, and agreeing less with Blanchard's description, such as it is.

26. **Diplotaxis ——?**

Hab. Mexico, Jalapa (*Höge*).

A single example of a species indeterminable.

27. **Diplotaxis magna.**

Oblonga, robusta, nigra, glabra, subnitida, palpis antennisque rufo-testaceis ; capite lato obtuso, dense subgrosse partim confluenter rotundato-punctato, clypeo fere rotundato, margine antico leviter sinuato et reflexo, fronte medio depressa ; thorace valde transverso, densissime confluenter punctato, medio dilatato, postice sinuato angulisque posticis exstantibus acutis, antice subrecto, angulis anticis acutis ; elytris costis valde distinctis haud elevatis, parum punctulatis, interstitiis latis confuse multipunctatis ; pygidio grossissime setifero-punctato ; corpore subtus sparsim subtilius punctato ; unguibus longe infra apicem robuste dentatis. Labrum arcuatim late excavatum.

Long. 14–15 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*, *Höge*). Four examples.

28. **Diplotaxis boops.**

Magna, oblonga, nigra, nitida, glabra, tarsis, antennis palpisque rufo-testaceis ; capite magno, rotundato, sparsim punctato ; clypeo brevi subrotundato, apice obtusissime truncato, margine parum reflexo ; thorace valde transverso, medio haud dilatato, lateribus leviter rotundatis, antice et postice recte paullo angustato, angulis omnibus subrectis, supra subtiliter disperse punctato ; elytris costis valde distinctis haud elevatis, parum punctulatis, interstitiis latis confuse multipunctatis ; pygidio grossissime setifero-punctato ; corpore subtus sparsim subtilius pilifero-punctato ; unguibus longe infra apicem robuste dentatis. Labrum arcuatim late excavatum.

Long. 14 millim.

Hab. Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Ciudad in Durango (*Höge*).

Two examples. Evidently closely allied to *D. magna*, notwithstanding the very different outline and sculpture of the thorax.

29. **Diplotaxis ——?**

Hab. Mexico, Northern Sonora (*Morrison*).

A testaceous-red species, with remarkably explanated hind angles of the thorax, the angles subacute at the apex. It is found also in Arizona, and has probably been described by American entomologists.

IV. *Clypeus brevis, obtusus, margine antico valde sinuato.*

30. **Diplotaxis flavisetis.** (Tab. IX. fig. 26.)

Oblonga, postice dilatata, fulvo-castanea, undique setis recumbentibus flavis obsita ; clypeo lato et brevi, lateribus

margineque antico reflexo valde sinuatis; fronte fere plana declivi, dense rugoso-punctata; thorace post medium rotundato-dilatato, angulis anticis acutis, posticis rotundatis, supra dense punctato; scutello toto punctato; elytris dense punctatis, costis et interstitiis æqualibus et æqualiter convexis; pygidio densissime punctato et longe erecte piloso; unguibus fissis dentibusque subæqualibus; pedibus præcipue tarsis sat dense flavo-pilosis.

Long. 8 millim.

Hab. Mexico, Tapachula in Chiapas (*Höge*).

Two examples; judging from the rather dense hairy clothing of the anterior tarsi, both males.

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31. **Diplotaxis contracta.**

Subovata, glabra, testaceo-fulva, antennis palpisque pallidioribus; clypeo brevi et lato, antice sinuato, angulis rotundatis, supra transversim convexo, sutura frontali lata depressa, fronte biarcuatim elevata, scabroso-punctata; thorace antice valde subrecte angustato, angulis anticis porrectis, lateribus prope basin breviter profunde sinuatis, angulis posticis acutis, supra inæquali grossissime punctato; elytris subconfluenter punctatis, costis elevatis subtilissime seriepunctatis; pygidio grossissime alveolato-punctato, setoso; ventris segmentis 2°–4^{m} convexis, inæqualibus, plus minusve rugoso-punctatis, 6° parvo; unguibus normalibus.

Long. 8 millim.

Hab. Mexico, Ciudad in Durango (*Forrer*).

An insect of singular aspect, owing to the anteriorly narrowed thorax. In other respects the species is normal, except that the labrum is more deeply emarginated; the emargination (as in other *Diplotaxes*) is broadly arcuated and obliquely upwards and backwards, but instead of leaving as usual a broad upper rim entire, nearly the whole of the centre of the organ is cut away.

Two examples.

32. **Diplotaxis (?) ——?**

Hab. Guatemala, Cerro Zunil (*Champion*).

A single example of a peculiar species, apparently belonging to this genus.

33. **Diplotaxis rugosipennis.**

Diplotaxys rugosipennis, Blanch. Cat. Coll. Ent. i. p. 172[1].

Hab. Mexico[1].

I have seen no specimen answering to Blanchard's description of this species.

Subfam. *RHIZOTROGINÆ.*

CHLÆNOBIA.

Chlænobia, Blanchard, Cat. Coll. Ent. i. p. 116 (1850); Lacordaire, Gen. Col. iii. p. 265 (1856).

Lacordaire placed this genus in the "Subtribu Macrodactylides"; but it differs from that group in all the characters which distinguish the "Macrodactylides" from the

"Rhizotrogides." It has, namely, long and sessile anterior coxæ, much longer than the breadth of the free lateral space of the prosternum; and equal ventral segments 2–5, with their sutures in the middle soldered. The general form and minor characters of the species also are those of *Lachnosterna* and *Phytalus*, and not of the "Macrodactylinæ." The males are distinguishable from the same sex of *Phytalus* only by the tarsi being thickened, and densely hairy beneath. The mandibles are exserted, curving over the edge of the ligular part of the mentum; the tarsal claws are dentate at the base and subequally and strongly bifid at the apex; the spurs of the hind tibiæ in the males are both freely articulated.

The only species hitherto described is Brazilian.

1. **Chlænobia ægrota.** (Tab. X. fig. 1.)

Elongata, angusta (♀ postice paullo crassiore), flavo-testacea (capite thoraceque interdum rufis), supra glabra, discrete punctulata; elytris interstitio suturali (prope basin et apicem excepto) convexo, costulis duabus angustis parum convexis (interdum obsoletis), brevibus; clypeo lato et brevi, concavo, utrinque late rotundato, antice medio sinuato; thoracis angulis posticis obtusis. Antennæ 9-articulatæ.

♂. Pygidium magnum, convexum, toto longe erecte pilosum, discrete punctatum, margine apicali reflexo. Metasternum femoraque subtus dense flavo-pilosa. Ventris segmenta medio plana punctato-pilosa; 6^{m} magnum, medio canaliculatum. Tarsi valde elongati, crasse filiformes, subtus dense pilosi.

♀. Pygidium usque prope apicem gradatim declive ibique bituberosum et subito depressum, concavum, breviter sparsim pilosum. Corpus subtus sparsius et brevius pilosum, crebrius punctatum. Ventris segmentum 6^{m} convexum, integrum. Tarsi breviores et tenuiores, subtus breviter pilosi.

Long. 13–16 millim.

Hab. Mexico, Cordova, Tomatlan (*Sallé*), Jalapa (*Höge*).

An example from Jalapa is figured.

2. **Chlænobia scabripyga.**

C. ægrotæ similis: differt thorace angulis posticis rectis subacutis pygidioque ♂ ♀ grosse confluenter punctato, apice solum piloso. Antennæ 10-articulatæ.

♂. Pygidium magnum, convexum, margine apicali minus alte reflexo. Ventris segmenta medio transverse convexa, rigidius setosa.

♀. Pygidium apice fossa magna rotunda et profunda lævi.

Long. 14–17 millim.

Hab. Mexico, Juquila (*Sallé*).

3. **Chlænobia latipes.**

Præcedentibus similis, sed differt utroque sexu tarsis omnibus late dilatatis, plantis densissime pilosis; clypeo paullo ampliore et profundius concavo, antice medio sinuato; thorace elytrisque paullo grossius et densius punctatis, illo angulis basalibus rectis. Antennæ 10-articulatæ.

♂. Pygidium sat dense punctatum, mediocriter convexum, medio sulcatum, apice reflexo et piloso. Ventris segmenta medio plana, 2°–4^{m} breviter, 5° et 6° longe pilosa. Tibiæ posticæ calcari interiore lato, apice lateraliter exciso.

♀. Pygidium medio tuberculis magnis obliquis duobus; medio late sulcatum, apice subtruncatum, margine reflexo.

Long. 15 millim.

Hab. Mexico, Teapa (*Sallé*).

This species is labelled *Liogenys angustata*, Chevr. (MS.), in the Sallé collection; the specific name I cannot adopt, as it would be very inappropriate in the genus to which the insect really belongs. The tarsi are shorter and the joints much broader than in *C. ægrota*, joints 2–4 being more than half as broad as long. There is no rudiment of a third (upper) tooth on the anterior tibiæ in the male, which is perceptible in the other species, and only a slight indication of it in the female.

4. Chlænobia tumulosa.

C. ægrotæ similis et affinissima: differt thorace angulis posticis exstantibus acutis; pygidio utroque sexu mediocriter discrete punctato, apice solum piloso. Antennæ 10-articulatæ.

♂. Tarsi lineares, sed articulis quam in *C. ægrota* paullo latiores. Venter medio planatus subconcavus, segmentis 2°–4^{m} dense brevior pilosis, 5° et 6° scopiferis.

♀. Pygidium post medium oblique valide bituberosum, apice profundissime concavo, margine apicali medio sinuato; lamina ventrali segmentum ventrale 7^{m} simulante.

Long. 14–17 millim.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), near the city, Dueñas, Capetillo (*Champion*).

The anterior tibiæ in the male have a slight indication of a third tooth, and in the female are more distinctly tridentate.

A single example (female) from Guatemala city has simply an irregular cavity on the pygidium. It is apparently deformed.

5. Chlænobia bicallosa.

C. tumulosæ proxime affinis: differt thorace fortius punctato, magis rotundato et postice magis angustato, angulis posticis acutis sed minus exstantibus.

♀. Pygidium medio fere usque ad basin sulcatum, apice haud excavatum, tuberibus medianis conicis minus obliquis, margine apicali rotundato, reflexo; lamina ventrali nulla. Antennæ 10-articulatæ.

Long. 15 millim.

Hab. Mexico, Tomatlan, Tuxtla (*Sallé*).

Three female examples only. The very different structure of the pygidium, which has no ventral horny plate simulating a seventh ventral segment, supported as this character is by the somewhat smaller, more rounded, and more coarsely punctured thorax, justifies the separation of this insect from *C. tumulosa*.

The striking modifications in the secondary sexual characters, in closely-allied forms of this genus, forms which other circumstances indicate to be only local varieties, are of great physiological significance.

6. Chlænobia æquata.

Præcedentibus simillima, paullo minor; clypeo minus ampliato, lateribus rotundato-convergentibus; thorace disperse punctato, angulis posticis acutis.

♂. Pygidium convexum, sparse punctatum, margine apicali rotundato-reflexo; ventris segmenta 5^{m} et 6^{m} medio longe fasciculatim, 2°–5^{m} brevius, pilosa; tarsi crasse filiformes, parum dilatati, subtus dense pilosi; tibiarum

posticarum calcaribus dissimilibus, interiore recto acuto, exteriore curvato latiore, apice oblique truncato. Antennæ 10-articulatæ; clava ♂ elongata.

♀. Pygidium nec tuberculatum nec excavatum, apice sublobatum, marginibus sinuatis ibique supra impunctatum. Antennarum clava elongata, gracilis, articulis 3°–7ᵐ conjunctis longiore.

Long. 12–14 millim.

Hab. NICARAGUA, Chontales (*Janson*); COSTA RICA (*Van Patten*), Volcan de Irazu (*Rogers*).

Four examples.

CHIRODINES.

Gen. *Chlænobiæ* et *Phytalo* affinis. ♂. Corpus elongato-angustatum, calvum. Caput sicut in *Chlænobia*; oculi magni. Labrum profunde arcuato-excavatum, longe setosum. Antennæ 10-articulatæ. Thorax toto marginatus, postice sinuatim leviter angustatus, angulis posticis acutis. Pedes elongati; tarsi robuste filiformes, subtus sparsim breviter setosi; unguibus 4 anteriorum simplicibus basi tantum late dentatis, 2 posteriorum profundissime fissis, dentibus gracilibus subæqualibus.

The simple claws of the four anterior tarsi distinguish this genus from both *Chlænobia* and *Phytalus*; the absence of dense pubescence from the soles of the tarsi (in the male) further distinguishes it from *Chlænobia*, to which it is most nearly allied by the form of the head and thorax and the long and stout filiform tarsi. The spurs of the hind tibiæ are both freely articulated, both long and slender, but the lower shorter than the upper.

1. **Chirodines zunilensis.** (Tab. X. fig. 2, ♂.)

Elongatus, subcylindricus, glaber, sordide flavo-testaceus, supra sat dense æqualiter punctulatus; clypeo late rotundato, margine anteriore reflexo, medio sinuato.

♂. Pygidium, præcipue apice, convexum, sparsissime punctatum, apice sulcato-marginatum. Venter glaber, lateribus punctulatis; segmentum 5ᵐ medio transverse sulcatum; 6ᵐ magnum, læve, medio depressum et longitudinaliter sulcatum. Tarsi anteriores valde elongati, articulis leviter incrassatis.

Long. 15 millim.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

Two male examples.

LISTROCHELUS.

Listrochelus, Blanchard, Cat. Coll. Ent. i. p. 141 (1850); Lacordaire, Gen. Coll. iii. p. 28 (1856); Leconte, Journ. Acad. Nat. Sc. Phil. 2nd ser. iii. p. 262 (1856); Horn, Trans. Am. Ent. Soc. vii. p. 138 (1878).

A genus characteristic of the insect fauna of the South-western States of America and the northern part of Mexico. Fourteen species have been described, nearly all of which are from the United States.

1. **Listrochelus laportæi.**

Listrochelus laportæi, Blanch. Cat. Coll. Ent. i. p. 141 [1].

Hab. MEXICO [1], Jalapa, Las Vigas (*Höge*).

Two male examples from Jalapa agree with Blanchard's description, especially in the margin of the clypeus being remarkably narrow and slightly reflexed, "clypeo angustissime reflexo;" the outline of the clypeus is nearly semicircular. In colour they are reddish or brownish-castaneous, the elytra dull, the thorax shining. The forehead is convex and roughly sculptured, not plane as in *L. clavatus*, *L. scuticeps*, and allied species, and the vertex has a very obtuse elevation from eye to eye, probably the "capite . . . vix carinato" of Blanchard; the outer hind angles of the posterior coxæ are very much produced, almost falcate. The sides of the body are fringed with remarkably long outstanding tawny hairs, and the claws are all uniformly pectinated. Two females from Las Vigas are darker in colour. The sexual characters are as follows:—

♂. Pygidium, præcipue postice, valde convexum, politum, disperse punctatum, apice subtruncato-rotundatum, fortiter marginatum. Venter lateraliter pruinosus, medio politus, depressus; segmenta 5^{m}–6^{m} subtiliter canaliculata, 2^{m}–6^{m} medio breviter setosa. Antennarum clava articulis 1^{o}–7^{m} æqualis. Ungues omnes denticulati.

♀. Pygidium elongatum, planum, apice sulcato-marginatum, breviter truncatum, parce punctulatum. Venter medio sparsim setosus; segmento 6° sat magno, plano, punctato, apice truncato. Ungues dente mediano, deinde usque ad apicem denticulati.

2. **Listrochelus cavatus.**

L. laportæi affinis; sed minor clypeoque latiore supra cavato, marginibus alte reflexis. Brevius ovatus, rufo-castaneus vel testaceus, supra (♂ ♀) nitidus, glaber, passim mediocriter punctatus, lateribus fimbriatis; thorace medio dilatato, angulis posticis valde obtusis; elytris costulis parum elevatis. Antennæ 10-articulatæ.

♂. Pygidium valde convexum, gibbosum, disperse punctulatum, glabrum, apice breviter truncatum, sub-bidentatum. Pectus dense cinereo-fulvo villosum. Venter lateraliter pruinosus, medio politus, lævis, depressus, medio postice profunde canaliculatus, segmento 6° brevissimo. Ungues omnes regulariter pectinati. Antennarum clava elongata, articulis 2^{o}–7^{m} conjunctis æquali.

♀. Pygidium fere planum, politum, sparsissime punctulatum, margine explanato apicali bidentatum. Pectus parce hirsutum. Venter segmento 5° apice transverse exarato-sulcato; 6° magno, convexo, grosse punctato, apice fovea lata depressa et margine apicali profunde sinuato. Ungues omnes prope apicem dentati, deinde usque ad basin pectinati.

Long. 11–12 millim.

Hab. Mexico, San Antonio de Arriba (*Sallé*), Mexico city (*Flohr*).

A single male specimen is in the Sallé collection, and we have received a pair from Mr. Flohr.

Var. *L. durangoensis.* Differt colore castaneo-fusco, clypeo antice paullo angustato lateribusque subrectis nec late rotundatis. (Tab. X. fig. 3, ♂.)

Hab. Mexico, Ciudad and Ventanas in Durango, Real del Monte in Hidalgo (*Höge*).

An example of the variety from Ventanas is figured.

3. **Listrochelus micros.** (Tab. X. fig. 4, ♂.)

L. cavato affinis: multo minor, sordide testaceo-fulvus, capite thoraceque interdum castaneo-fuscis, glaber, subnitidus; clypeo transverso, obtuse rotundato, margine integerrimo valde elevato, cum fronte discrete punctata, fronte plana, declivi; thorace medio valde dilatato, margine confertim crenulato, supra disperse punctulato; elytris punctulato-rugulosis. Antennæ 9-articulatæ; articulis 3° et 4° elongatis, æqualibus.

♂. Pygidium gibbosum, politum, glabrum, dispersissime punctulatum. Venter medio concavus et canaliculatus, parcissime setosus; segmento 6° brevi, fere lævi. Ungues elongati, omnes (prope apicem excepto) breviter pectinati. Pectus dense fulvo-villosum. Antennarum clava elongata, articulis 2°–6^{m} conjunctis æqualis.

♀. Pygidium fere planum, politum, glabrum, dispersissime punctulatum. Venter convexus, lævis; segmento 6° apice medio profunde inciso. Ungues medio breviter dentati, deinde usque ad basin paull dilatati et minute denticulati.

♀. Variat unguibus pedum 4 anteriorum medio dentatis, 2 posteriorum edentatis et haud conspicue denticulatis; vel omnibus edentatis.

Long. 8–10 millim.

Hab. Mexico, Toluca (*Höge*).

Numerous examples.

4. **Listrochelus præsidii.** (Tab. X. fig. 5, ♂.)

Elongatus, fere cylindricus, castaneus, thorace lætius rufo-castaneo, polito, elytris fulvo-testaceis, palpis, antennis pedibusque fulvo-rufis, nitidis; clypeo transverso, antice obtusissime rotundato, parum sinuato, mediocriter reflexo, dense discrete punctato, sutura frontali acute impressa flexuosa, fronte sparsim punctata, vertice obtuso; thorace medio valde dilatato, antice et postice angustato, angulis anticis oblique truncatis, posticis obtusis, supra disperse punctato; elytris parum dense punctulatis, interstitio suturali vix elevato, subpunctulato.

♂. Pygidium gibbosum, medio dense punctulatum et fulvo-setiferum, apice politum, sparsissime punctulatum. Venter lateraliter argenteo-pruinosus, medio nitidus, depressus, aspere setifero-granulatus; segmentum 5^{m} postice profunde sinuatum, 6^{m} medio elongatum, concavum, granulatum, et breviter canaliculatum. Pectus cinereo-fulvo villosum. Ungues omnes subtus æqualiter bipectinati.

♀. Pygidium basi planum, prope medium subito convexum ibique profundissime sulcatum. Venter medio glaber; segmentum 5^{m} apice integrum, 6^{m} convexum, punctatum. Ungues supra medium valde dentati, deinde usque ad basin serrulati.

Long. 18 millim.

Hab. Mexico, Presidio (*Forrer*).

Two male and two female examples. Apparently closely allied to *L. disparilis*, Horn, from Arizona and New Mexico; but differing sufficiently in the sculpture and clothing of the pygidium, form of the ventral segments, and general colour. The convexity of the lower part of the pygidium in the female may be described, in other words, as two elongate polished callosities separated at the median line by a deep and straight furrow.

5. **Listrochelus scuticeps.**

Anguste oblongo-ovatus, fulvo-testaceus, thorace femoribusque rufo-testaceis, nitidis, elytris leviter pruinosis, subopacis; fronte et clypeo (plano declivi) dense subalveolato-punctatis, occipite transversim sulcato, lævi, clypeo longiusculo semiovato, antice obtuso, margine reflexo, antice paullo sinuato; thorace paullo post medium valde dilatato, angulis obtusis, sat dense sed discrete punctato, linea dorsali lævi; elytris rugulosocoriaceis haud distincte punctulatis.

♂. Pygidium prope apicem gibbosum, nitidum, sat distanter piloso-punctatum. Venter medio concavus, politus, fere lævis; segmento 5° apice canaliculato, 6° subconvexo, grosse punctato, medio acute canaliculato. Ungues elongati, apice excepto pectinati. Antennarum clava elongata, gracilis, articulis 2°–7^{m} conjunctis parum brevior.

♀. Pygidium fere planum, apice rotundatum, disperse piloso-punctatum. Venter medio fere lævis; segmento 6°

plano, margine apicali integro. Ungues ante medium dentati, deinde usque ad basin denticulati. Variat elytris valde pruinosis pygidioque glabro.

Long. 12–13 millim.

Hab. Mexico, Villa Lerdo in Durango (*Höge*).

Var. major ♀. 17 millim. Capite thoraceque castaneo-fuscis.

Hab. Mexico, Tapachula in Chiapas (*Höge*). One example.

6. **Listrochelus parilis.**

L. scuticipiti proxime affinis: supra castaneus (thorace obscuriore et nitidissimo), elytris griseo-pruinosis, subopacis, antennis pedibusque testaceo-rufis, pectore aureo-fulvo villoso; fronte sicut in *L. scuticipiti* plana declivi, occipiteque transversim exarato-sulcato, lævi, sed clypeo ampliore semicirculari, margine alte reflexo, integro; thorace subtiliter discrete punctulato (interdum in ♂ densius), vitta mediana lævi; elytris punctulatis et erecte hirsutis.

♂. Pygidium mediocriter et præcipue prope basin convexum, disperse punctulatum, glabrum, margine apicali subsinuatim et late truncatum. Venter medio segmentis 4° et 5° valde depressis, 2° et 3° medio piliferopunctatis, 5° et 6° glabris, canaliculatis. Ungues subtilissime denticulati, paullo post medium brevissime dentati, apice subhamati. Antennarum clava articulis 2°–7^{m} conjunctis longior.

♀. Pygidium sicut in ♂. Venter convexus; segmento 5° dimidio apicali subito depresso, fere lævi; segmento 6° convexo, setifero, punctato, apice integro. Antennarum clava sat elongata, articulis 3°–7^{m} conjunctis fere æqualis. Ungues post medium dentati, deinde ad basin denticulati.

Long. 13–14 millim.

Hab. Mexico, Refugio and Ciudad in Durango (*Höge*).

The similarity between the two sexes in nearly all the usual differentiating characters distinguishes this species in a singular manner from its congeners.

7. **Listrochelus culminatus.**

Oblongus, subovatus, castaneo-rufus, glaber; clypeo semicirculari, margine alte reflexo, antice medio depresso vix sinuato; fronte brevi, subverticali, postice culmine alto dense tuberculato delimitato, confertissime grosse punctato et piloso; occipite late transversim depresso, medio polito, lateribus punctatis; thorace post medium rotundato-dilatato, angulis anticis rotundatis, posticis obtusis, supra sat dense punctulato, spatio discoidali lævi; elytris discrete punctulatis, costis suturali et discoidali (obliqua) sat elevatis.

♀. Pygidium elongatum, recte angustatum, apice truncatum, planum vel medio paullo depressum, basi sparsissime apice dense pilifero-punctatis. Venter medio subglaber, segmento 6° setifero-punctato, apice integro. Ungues dente valido haud procul ab apice, deinde usque ad basin dilatati et denticulati.

Long. 16 millim.

Hab. Mexico, Matamoros Izucar in Puebla, Jalapa (*Höge*).

Only two examples, both females, and exactly similar.

8. **Listrochelus maximus.** (Tab. X. fig. 6, ♂.)

Magnus, robustus, fulvo-testaceus (pedibus rufioribus), supra sat dense punctulatus et recumbente breviter griseo pilosus, apud frontem, thoracem elytrorumque basin, pilis longioribus erectis intermixtis; capite grosse confluenter punctato, clypeo brevi, obtuse rotundato, margine alte reflexo, integro; thorace paullo post medium dilatato, angulis anticis acutis, margine crenato.

♂. Pygidium planum, margine apicali alte acute reflexum, dense punctulatum, pilosum, opacum. Venter medio longitudinaliter concavus, punctulato-pubescens, opacus; segmento 5° medio densissime punctulato, subnitido, margine apicali valde flexuoso medio producto, 6° medio transversim concavo, margine anteriore

medio elevato et late triangulariter dilatato. Calcaria postica libera, inferiore spatulato superiore multo longiore et gracilior. Antennarum clava valde elongata, cæteris articulis conjunctis multo longior; articulis 4°–7^{m} intus paullo productis, acutis.

Long. 21 millim.

Hab. Mexico, Juquila (*Sallé*).

Two males only, exactly similar.

9. **Listrochelus scoparius.**

Listrochelus scoparius, Lec. Journ. Acad. Phil. ser. 2, iii. p. 264 [1]; Horn, Trans. Am. Ent. Soc. vii. p. 142 [2].

Hab. North America, Arizona [2].—Mexico, Sonora [1].

10. **Listrochelus mucoreus.**

Listrochelus mucoreus, Lec. Journ. Acad. Phil. ser. 2, iii. p. 263 [1]; Horn, Trans. Am. Ent. Soc. vii. p. 144 [2].

Hab. North America, California [1], Texas, Arizona &c.[2].—Mexico, Northern Sonora (*Morrison*).

One female example from the late Mr. Morrison, bearing the name of this species, which agrees moderately well with Dr. Horn's description.

11. **Listrochelus ——?**

Hab. Mexico, Cholula in Puebla (*Höge*).

A single female example, apparently of a species different from any of the foregoing.

12. **Listrochelus oblongulus.** (Tab. X. fig. 7, ♂.)

Parvus, elongato-oblongus, nitidus, niger vel (immaturus?) castaneus, subtus cum femoribus testaceo-rufus; clypeo elongato semiovato vel obtuse quadrato concavo, marginibus alte elevatis, integris, fronte planato-declivi, occipite haud elevato, polito; toto capite dense punctato, glabro; thorace sat elongato, medio dilatato, margine laterali crenato, angulis anticis rectis, posticis obtusis, supra discrete punctato, spatio dorsali lævi; elytris sat disperse punctulatis, subrugulosis, costis lævibus. Pygidium sat elongatum, parum convexum, disperse grosse punctatum, parce setosum. Coxarum posticarum angulum exterior haud productum. Antennæ 9-articulatæ.

♂. Venter fere lævis, segmento 6° medio transverse planato. Ungues omnes edentati minute denticulati.

♀. Venter fere lævis, segmento 6° convexo. Ungues omnes dente parvo acuto ante medium, post dentem latiores et subtiliter denticulati.

Long. 8–10 millim.

Hab. Mexico, Iguala in Guerrero, Chilpancingo (*Höge*). A good series of examples.

This small and narrow insect has not at all the appearance of a 'Rhizotrogide' In general form it resembles much more the species of *Hadrocerus* ('sensu' Burmeister) of the *Clavipalpus* group. The labrum is narrowly and deeply excavated, the apical joint of the maxillary palpi slender, and the mandibles concealed.

PHYTALUS.

Phytalus, Erichson, Naturg. Ins. Deutschl. iii. p. 658 (1848); Burmeister, Handb. der Ent. iv. 2, p. 345 (1855); Lacordaire, Gen. Col. iii. p. 287 (1856).

A genus distinguished from the following (*Lachnosterna*) only by the mode of dentition of the tarsal claws, the usual inner tooth, which in *Lachnosterna* varies in position from near the base to near the apex, being here apical, so that the claws are properly termed fissile or cleft. The examination of a large series of species has proved the correctness of Lacordaire's opinion that this character would eventually prove untenable, for I find that every gradation exists between a typical *Phytalus* with cleft claws, and the section of *Lachnosterna* in which the tooth is placed near the base. I retain the genus, however, as a convenient group, in the belief that a division of the great genus *Lachnosterna* into numerous genera will soon become indispensable, and that *Phytalus* will probably then be retained under some restricted definition.

I have not here restricted the genus to those species in which the inner or lower tooth of the claw is equal in length and subparallel to the apical portion, but have found it necessary to include in it a numerous group in which this tooth is more or less short but nearly parallel, and others (*P. pubicollis*, Blanch.) in which it is considerably deflexed and divergent though always nearer the apex than in *Lachnosterna*. Even thus modified, the fissile character of the claws applies strictly to the males only; the females in some species (e. g. *P. obsoletus*) having the lower tooth rather widely divergent, thus approaching the form presented in Section IV. of *Lachnosterna*. In facies and in nearly all points of structure on which genera are founded in the 'Rhizotroginæ' there is no agreement among the species. For example, the number of antennal joints varies from 10 to 8, the intermediate joints varying in relative length, and the leaflets of the club vary in number in the males from 3 to 5; the lower spur of the hind tibiæ, generally articulated, is in some species connate; the mandibles are visible or not in repose; and the clypeus is of the most diverse formation. But it must be added that no better result follows in this instable series of forms when any other leading character is taken as a basis for grouping.

A score of species of *Phytalus* have been described. Like *Lachnosterna* it is found in America and in South-eastern Asia; but unlike that genus it appears to be scarcely represented in temperate North America, where *Lachnosterna* abounds in species. The genus is not mentioned by Leconte in his important work on the Melolonthidæ of the United States published in 1856; but I have seen specimens of a species, apparently undescribed, from Arizona.

I. *Antennal joints 3–7 short.*

a. *Lower tooth of the claws not much shorter than the upper, at most a little deflexed in the male (sometimes much more so in the female); both spurs of the hind tibiæ free.*

1. Phytalus obsoletus.

Phytalus obsoletus, Blanch. Cat. Coll. Ent. i. p. 131[1]; Burmeister, Handb. der Ent. iv. 2, p. 349[2].
Var. minor. *Phytalus lævigatus*, Blanch. l. c. p. 131[3].

Hab. Mexico[1 2 3], Orizaba, Guanajuato, Puebla, Juquila, Chiapas (*Sallé*), Jalapa, Oaxaca, Las Vigas (*Höge*); Guatemala (*Sallé*), Cerro Zunil, Las Mercedes, Volcan de Atitlan, Dueñas, Capetillo, Guatemala city, Purula, Panzos (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*).

There are many examples in the Sallé collection of both of Blanchard's species, apparently correctly named, and after a long study of a numerous series of similar individuals from various localities I fail to discover any constant character whereby they may be distinguished. The males of both agree in the highly peculiar form and clothing of the ventral segments, the description of which by Burmeister may be supplemented, as follows:—

♂. Venter medio longitudinaliter concavus, densissime fulvo-pilosus; segmento 5° postice sublobato-producto, 6° medio contracto. Pygidium convexum, sparse punctatum; margine apicali reflexo, fimbriato.

In the female the pygidium is very slightly convex and unituberculated near the apex; the tubercle varies in size and a little in its distance from the apical margin, the largest individuals (labelled *P. obsoletus* in the Sallé collection) having it furthest removed from the margin and more erect.

In both sexes the spurs of the hind tibiæ are freely articulated, long, and pointed. The tarsal claws differ considerably according to sex. In both male and female the base of each claw is very little and very gradually dilated, not dentate; in the male the apex is cleft, with the lower tooth broader than the upper; in the female the claw cannot be said to be cleft, but is furcate, the lower and broader tooth being removed nearer to the middle of the claw. In length the species varies from 14 to 21 millim.

P. obsoletus bears a very close resemblance to *Lachnosterna testaceipennis*.

2. Phytalus punctuliceps.

P. obsoleto similis; flavo-testaceus, thorace vix rufiore verticeque nigricanti, glaber, nitidus; differt capite, thorace et scutello regulariter sat dense et eleganter punctulatis; clypeo semicirculari, perparum reflexo, antice medio sinuato, sutura acuta flexuosa; thorace transversim quadrato, postice haud angustato nec medio dilatato, ante medium rotundato-angustato, angulis posticis rectis subacutis, margine postico bisinuato; elytris paullulum grossius subrugulose punctulatis, pectore mediocriter flavo-hirsuto. Ungues omnes ♂ ♀ basi rotundato-dilatati, apice profunde fissi, dente inferiore paullo grossiore et breviore; calcaria postica ♂ ♀ elongata, gracili, libera.

♂. Pygidium convexum, glabrum, disperse punctatum, margine apicali incrassato et subtus horizontaliter pro-

longato segmentum ventralem 7^m simulante. Venter medio depressus, glaber, segmentis 2°–6^m æqualibus, setis elongatis paucis.

♀. Pygidium sicut in ♂, sed lamina ventrali interdum occulta. Venter politus, segmento 5° apice transverse exarato-depresso.

Long. 16–18 millim.

Hab. Guatemala, Capetillo (*Champion*).

Three examples, two of them females, in one of which the pygidium is not closed on the last ventral segment, leaving a narrow ventral plate visible at its apex.

3. Phytalus nubipennis.

Minor, oblongo-ovatus, castaneo-rufus (vel fulvus thorace rufo), nitidus, elytris ventrisque lateribus leviter pruinosis, brevissime recumbenti-setosis (vel nudis), subopacis; capite lato, dense subgrosse confluenter punctato, fronte convexa, sutura frontali valde impressa; clypeo transverso, lateribus haud ampliatis, antice rotundatis, margine apicali anguste reflexo medioque breviter sinuato; thorace medio subangulatim dilatato, supra sat distanter punctulato; elytris disperse et parum profunde punctulatis, costa mediana elevata. Variat elytris costula parum elevata submarginali.

♂. Pygidium fere planum, glabrum, disperse punctatum. Venter medio politus, fere glaber; segmento 5° fovea magna granulata, 6° transversim leviter depresso ruguloso. Antennarum clava mediocris ovata. Ungues basi vix dilatati, apice fissi, dente inferiore paullo fortiore vix breviore.

Long. 13–15 millim.

Hab. Mexico, Yolos, Oaxaca (*Sallé*).

Four examples, all males.

4. Phytalus ambigenus.

P. nubipenni simillimus, coloribus formaque corporis haud differt, sed aliis characteribus valde discrepat. Caput haud magnum, normale, grossius reticulato-punctatum; clypeo parvo, fere semicirculari, margine alte reflexo, integro; sutura frontali parum impressa, lævi; fronte thoraceque longe erecte hirsutis; elytris fortius punctatis. Variat, sicut *P. nubipennis*, elytris costula parum elevata submarginali.

♂. Pygidium basi paullo convexum, apice planatum, disperse setifero-punctatum. Venter longitudinaliter concavus et canaliculatus, sparsim breviter setosus; segmenti 5^ti plaga posteriore mediana convexa dense granulata, margineque postico arcuatim emarginato, 6° magno, medio depresso et longe et dense setoso. Ungues robustiores, basi magis dilatati, dente inferiore multo latiore paullo deflexo. Antennarum clava valde elongata, cæteris articulis conjunctis multo longior.

♀. Pygidium sicut in ♂, sed longior et juxta apicem subtuberculatum. Venter segmento 6° valde convexo. Ungues furcati, dente inferiore angustiore et acutiore sed magis deflexo.

Long. 13 millim.

Hab. Mexico, Yolos (*Sallé*), Oaxaca (*coll. Bates*).

Two males and one female. In this species the tarsal claws are almost too divergent in their apical teeth to warrant its retention in the genus *Phytalus*.

5. Phytalus (?) pubicollis.

Phytalus pubicollis, Blanch. Cat. Coll. Ent. i. p. 131 [1].

Hab. Mexico (*Ghiesbreght* [1], *Sallé ex coll. Sturm*).

The single example in the Sallé collection bearing the above name agrees fairly well

with Blanchard's description and is a male. This specimen has the clypeus rather small and nearly semicircular, without the usual sinuation of the front margin. The secondary sexual characters are as follows:—

♂. Pygidium parum convexum, nitidum, pilosum, irregulariter annulato-punctatum. Venter medio late canaliculatus, nitidus, sparsim setosus, segmento 6° transversim concavo. Tibiarum posticarum calcaria elongata, libera.

The tarsal claws are, as Blanchard states, short and curved. The lower tooth is very broad and curved, and the basal stem of the claw is short and broad without the usual tooth-like dilatation. I leave the species in the present genus with reserve.

It differs little in the form of the claws from *Lachnosterna testaceipennis*.

6. **Phytalus** (?) ——?

Hab. Mexico, Ventanas in Durango (*Höge*).

A female example of a species certainly allied to *P. pubicollis*, but with the lower tooth of the claws much curved and deflexed, and consequently not strictly belonging to the genus.

7. **Phytalus cometes.** (Tab. X. fig. 8, ♂.)

Elongato-ovatus, robustus, rufescenti-fuscus, pilis incumbentibus fulvis densissime vestitus, elytris prope marginem et suturam setifero-porosis; clypeo transverso, antice late rotundato medio sinuato, margine reflexo, supra dense punctato, fronte confluenter punctata, sutura haud perspicua; thorace elytrisque dense regulariter punctulatis, illo angulis posticis fere rectis; pectore, femoribus et coxis fulvo-hirsutis.

♂. Pygidium convexum, alutaceum, apice interdum nitidum, umbilicato-punctulatum, margine apicali acuto, reflexo. Venter longitudinaliter depressus, breviter pilosus, segmento 5° apice medio late sinuato, 6° medio transversim concavo. Tibiarum posticarum calcaria elongata, gracilia, libera. Ungues omnes basi triangulariter dentati, apice profunde sed anguste fissi, dente inferiore latiore sed haud breviore, paullo deflexo. Antennarum clava elongata, articulis 2°–7^{m} conjunctis longior, 7° intus valde producto acuto.

Long. 21–24 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Panama, Chiriqui (*coll. Bates*).

Four examples, all males.

This species is the analogue (in *Phytalus*) of the *L. crenulata* group of *Lachnosterna* (Leconte's Group XII.); the totally different form of clypeus and other characters, besides the generic difference in the claws, forbid the supposition of a real affinity.

A Chontales specimen is figured.

b. *Lower tooth of the claws not much shorter than the upper; lower spur of the hind tibiæ connate.*

8. **Phytalus pruinosus.**

Phytalus pruinosus, Blanch. Cat. Coll. Ent. i. p. 131[1]; Burm. Handb. der Ent. iv. 2, p. 349[2].

Hab. Mexico[1 2], Cordova (*Sallé*), Jalapa (*Höge*).

I have seen very few examples of this insect, which is liable to be confounded with

similarly dark-coloured and smooth, pruinose species of *Lachnosterna*. The following secondary sexual characters will facilitate its determination :—

♂. Pygidium mediocriter convexum, apice explanato-reflexo, nudum, rotundato-punctatum. Venter medio mediocriter depressus, toto pruinosus, segmento 6° solum nitido, crebre punctato. Tibiarum posticarum calcari inferiore connato, parvo, unciformi. Ungues omnes (basi ♂ ♀ breviter dentati) apice profunde et anguste fissi, dente inferiore paullo latiore.

♀. Pygidium ante apicem convexum, subconicum, apice ipso explanato-reflexo. Venter convexus, pruinosus, segmento 6° solum nitido, crebre punctato. Tibiarum posticarum calcaria sat brevia, compressa, libera. Ungues omnes dente inferiore parum latiore, mediocriter remoto, deorsum curvato.

9. **Phytalus prolixus.**

Cylindricus, elytris præcipue valde elongatis, supra glaber, nitidus, castaneo-fuscus vel castaneo-rufus, elytris plerumque fulvo-testaceis; clypeo brevi, transverso, medio profunde sinuato, lateribus rotundatis, sat sparsim punctato; thorace transverso, post medium haud angustato, angulis posticis rectis, sat dense punctulato; elytris undique punctatis, costis vix elevatis, interstitio suturali parce punctulato; pectore fulvo-hirsuto.

♂. Pygidium parum convexum, glabrum, grosse disperse punctatum. Venter medio depressus, lævis, segmento 6° brevi, grosse punctato et setoso. Tibiarum posticarum calcar inferior breve connatum. Ungues apice profunde fissi, dente inferiore paullo latiore et multo longiore.

♀. Pygidium a ♂ haud differt. Venter convexus, lævis, segmento 6° convexo, grosse punctato. Ungues desunt.

Long. 20–26 millim.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*).

Five examples, of which one only is of the female sex.

The shape of the head is similar to that which prevails in the *L. rorulenta* and *L. fusca* groups of *Lachnosterna*, which also exhibit the peculiar feature of a soldered lower spur to the hind tibiæ of the male.

10. **Phytalus trichodes.**

P. pubicolli similariter pubescens, sed major, clypeo medio sat acute sinuato, etc. Oblongus, fulvo-ochraceus, subnitidus, undique sat breviter dense fulvo-pilosus et dense punctatus; capite umbilicato-punctato; antennis rufis, nitidis, clava pallidiore, opaca; pectore dense fulvo-villoso.

Long. 17–20 millim.

Hab. MEXICO, Las Vigas (*Höge*).

Numerous examples were captured by Herr Höge. *P. trichodes* is an oblong-ovate species of tawny or reddish-ochreous colour, and densely clothed throughout with rather short erect tawny hairs. The tarsal claws are dilated at the base, and, as in *P. obsoletus*, differ as regards the apical fissure according to sex; the following are the secondary sexual characters :—

♂. Pygidium sat elongatum, parum convexum, dense punctato-pilosum, margine apicali acuto, paullo reflexo. Venter medio longitudinaliter depressus, subglaber; segmentum 6^{m} magnum, convexum. Tibiarum posticarum calcari inferiore affixo brevi, unciformi. Ungues omnes apice anguste fissi, dente inferiore majore et longiore.

♀. Pygidium glabrum, sparse punctatum, declive et paullo ante apicem unituberculatum. Venter medio convexus, lævis, suturis 1^{a}–4^{m} obliteratis, segmento 6° convexo. Tibiarum posticarum calcaria æqualiter elongata, ensiformia. Ungues omnes apice profunde fissi, dente inferiore distanti deorsum curvato.

This species is the analogue of the *L. ilicis* and *L. hirticula* group of *Lachnosterna* (Leconte's Group IX.); but it is only an analogy, or the recurrence of similar external features, as clearly demonstrated by the numerous important points of structural difference.

c. *Lower tooth of the claws much shorter than the upper, sometimes parallel to it, sometimes a little deflexed.*

11. **Phytalus macrocerus.** (Tab. X. fig. 9, ♂.)

Breviter ovatus, fulvo-testaceus, ventro flavo, fronte thoraceque longe hirsutis. Clypeus transversus, concavus, margine antico valde elevato fere integro, supra parum punctato; thorace discrete punctulato, medio rotundato sed postice angustato; elytris grossius discrete punctatis, costulis angustis elevatis, punctis singulis setam incumbentem griseam emittentibus; pectore fulvo-villoso. Antennæ 10-articulatæ.

♂. Pygidium fere planum, disperse punctatum, setis nonnullis. Venter late concavus, fere lævis, segmento 5° apice medio dense granulato ibique margine sinuato, 6° medio lato, canaliculato, fasciculato, longe setoso. Calcaria postica elongata, libera. Ungues basi vix dilatati, apice fissi, dente inferiore multo breviore, paullo latiore, obtuso. Antennarum clava longissima, flava, cæteris articulis conjunctis multo longior.

♀. Pygidium fere planum, apice conicum, sicut in ♂ disperse setifero-punctatum. Ungues dente inferiore quam in ♂ longiore et acutiore.

Long. 11–13 millim.

Hab. Mexico, Oaxaca, Cordova (*Höge*).

A large series of examples.

12. **Phytalus platyrhinus.** (Tab. X. fig. 10, ♂.)

Oblongus, subcylindricus, castaneo-fuscus, nudus, subnitidus, corpore subtus, antennis et pedibus fulvo-testaceis; clypeo brevi latissime quadrato, angulis rotundatis, antice leviter et late sinuato parum reflexo, sat dense, fronte sparsim, punctato; oculis magnis; thorace ante medium dilatato, postice haud angustato, angulis posticis rectis subacutis, subtiliter disperse punctulato; elytris ruguloso-punctulatis vel coriaceis, costis perspicuis sed rugulosis; scutello rufo-castaneo; pectore fulvo-villoso. Antennæ 10-articulatæ.

♂. Pygidium convexum, versus apicem planulatum, politum, disperse punctulatum. Venter medio usque ad anum longitudinaliter anguste depressus, impunctatus, glaber, segmentis 5° et 6° parce punctulatis et pilosis. Calcaria postica elongata acuta, inferiore breviore. Ungues dente inferiore multo breviore, acuto, nec latiore, nec deflexo. Antennarum clava cæteris articulis conjunctis multo longior, articulis 5°–7^{m} brevissimis intus acute prolongatis.

♀. Pygidium medio transversim concavum. Venter convexus. Ungues dente inferiore mediano sicut dente apicali curvato sed multo breviore. Antennarum clava parva, ovata, articulis 5°–7^{m} normalibus.

Long. 17 millim.

Hab. Mexico, Orizaba (*Sallé*), Salazar, Jalapa (*Höge*).

Six examples, of which one only (from Orizaba) is a female. The hind tarsi in this latter are wanting, and the remarkable sexual difference in the position of the lower tooth is described from the anterior and middle pairs. The mandibles are short and broad, and when closed are invisible. A specimen from Jalapa is figured.

13. **Phytalus batillifer.** (Tab. X. fig. 11, ♂.)

Subcylindricus, robustus, flavo-testaceus, glaber, elytris pruinosis; clypeo elongato, valde concavo, rotundato-quadrato, margine antico medio breviter recurvato-dentato, supra superficialiter (fronte grossius) alveolato; thorace medio perparum dilatato, postice vix angustato, margine serrato, robustissime setoso, supra profunde irregulariter punctato; elytris punctulatis, ecostatis; pectore tenuiter fulvo-hirto.

♂. Pygidium convexum, politum, dispersissime annulato-punctatum. Venter medio concavus, sparse setifero-punctulatus, segmento 6° plano cum 5ti apice canaliculato. Calcaria postica libera, elongata, acuta. Ungues apice anguste fissi, dente inferiore multo breviore perparum grossiore; basi obtuse dentati. Tibiæ anticæ dente 3° vix perspicuo.

Long. 17–20 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*), Cuernavaca (*Höge*).

A species remarkable for its long shovel-shaped clypeus, the anterior recurved margin of which projects far beyond the labrum. The mandibles are not visible and the tarsi are robust-filiform, characters which show that the insect is closely allied to *Rhizotrogus*. It bears the unexpressive name *Ancylonycha pallida*, Sturm (MS.), in the Sallé collection.

14. **Phytalus högei.** (Tab. X. fig. 12, ♂.)

Oblongus, glaber, nitidus, castaneus, subtus fulvo-testaceus; capite discrete haud grosse punctato, clypeo lateribus parum rotundatis, margine reflexo, antice sinuato; thorace ante medium dilatatus, deinde usque ad basin recto (lateribus parallelis), discrete punctulato; elytris mediocriter ruguloso-punctulatis, costis paullo distinctis; pectore flavo-villoso.

♂. Pygidium fere planum, disperse sat grosse punctatum, glabrum. Venter medio vix depressus, politus, segmento 5° simplici, 6° medio transversim haud profunde impresso vel sulcato fere lævi. Calcaria postica gracilia. Ungues dente inferiore cum apicali parallelo haud latiore, acuto, multo breviore. Antennarum clava valde elongata, cæteris articulis conjunctis multo longior; articulis 4°–7m intus paullulum productis, 6° et 7° brevioribus et latioribus.

♀. Pygidium basi convexum, bicallosum, apice planum, glabrum, parum punctulatum.

Long. 15 millim.

Hab. Mexico, Toluca (*Höge*).

Nearly a score of examples. This species, like others of this section, has the facies of a *Rhizotrogus*.

Antennal club with 5 *leaflets.*

15. **Phytalus pentaphyllus.** (Tab. X. fig. 13, ♂.)

Elongato-oblongus, piceo-niger, glaber, nitidus, supra passim discrete haud profunde punctulatus, subtus cum antennis pedibusque piceo-rufus; clypeo parvo, lateribus antice convergentibus, margine antico anguste reflexo, medio profunde emarginato; thorace medio mediocriter dilatato, antice et postice æqualiter angustato, angulis posticis acutis; scutello sat dense punctulato, linea longitudinali lævi.

♂. Pygidium basi convexum, deinde verticale disperse punctatum. Venter medio longitudinaliter depressus, lævis, segmento 5° apice depresso, 6° basi convexo, medio lævi, apice transversim sulcato-punctato. Calcaria postica gracilima, acuta. Ungues basi obtuse dentati, apice anguste fissi, dente inferiore vix latiore multo breviore. Antennarum clava valde elongata, pentaphylla, articuli 7i lamina paullo, 6i multo, abbreviata, articulo 5° intus sat longe, 4° brevius acute productis.

Long. 18 millim.

Hab. Mexico, Ciudad in Durango (*Höge*).

There is a single male example only of this remarkable insect, which, notwithstanding the eccentric structure of its antennæ, seems to be perfectly congeneric with the other species of the Group II. The parts of the mouth offer no perceptible difference; and the legs, though longer and more slender than usual, are similar in form and proportions to those of certain species of *Lachnosterna*.

II. *Antennal joints* 3–5 (*in* 8-*jointed species* 3 *and* 4) *elongate and subcylindrical.*

1. *Antennæ* 10-*jointed.*

16. **Phytalus seniculus.**

Subcylindricus, pallide testaceus, fronte et thorace longe erecte flavo-pilosis; clypeo mediocriter transverso, antice sinuato discrete punctato, fronte grosse confluenter scabroso-punctata; thorace medio dilatato, postice subsinuatim angustato, angulis anticis et posticis subrectis nullomodo productis, supra sat dense mediocriter grosse punctato; elytris subtilissime punctulatis, fere lævibus, ecostatis; pectore flavo-villoso.

♂. Pygidium mediocriter convexum, nitidum, punctatum, apice incrassato-reflexo. Venter medio parum depressus, lævis, segmentis 5° et 6° breviter flavo-pilosis, hoc medio leviter concavo. Tibiarum posticarum calcaria mediocriter elongata, libera, inferiore breviore. Ungues omnes dentibus fere æqualibus, inferiore vix breviore; basi minute dentati. Antennarum clava valde elongata, cæteris articulis conjunctis subæqualis; articulis 3°–5^{m} cylindricis, gradatim longioribus, 6° minus elongato, 7° brevissimo.

Long. 13–15 millim.

Hab. Mexico, Chiapas, Tepansacualco (*Sallé*).

Two male examples only.

17. **Phytalus xanthocomus.** (Tab. X. fig. 14, ♂.)

Oblongus, flavo-testaceus, glaber, fronte thoraceque dense erecte hirsutis; clypeo sat parvo, lateribus antice paullo convergentibus, apice rotundatis, margine reflexo medio inciso-emarginato, dense punctato, fronte alveolato-punctata; thorace medio valde dilatato, angulis posticis rectis, anticis obtusis, supra sat grosse et subdense punctato; elytris punctulato-rugulosis; pectore flavo-villoso.

♂. Pygidium convexum, glabrum, disperse punctatum. Venter depressus, lævis, segmento 5° medio setoso, 6° medio foveato. Calcaria postica libera. Ungues dente apicali sat lato acuto curvato, inferiore breviore, paullo distanti, lato; basi rotundato-dilatata. Antennarum clava elongata, articulis 2°–7^{m} conjunctis æqualis, articulis 3°–5^{m} paullo elongatis, cylindricis, 6° breviore, 7° brevissimo.

Long. 13 millim.

Hab. Mexico, Chiapas (*Sallé*); Guatemala, Totonicapam (*Champion*).

Two examples, both males.

The claws are broadly dilated at the base and very gradually narrowed, but still broad to the base of the tooth. This species and the following approach very closely the Group I. of *Lachnosterna*. The Guatemalan example is figured.

18. **Phytalus ——?**

Hab. Guatemala, Cerro Zunil (*Champion*).

One example, male, immature.

19. **Phytalus bolacoides.**

P. bucephalo affinis, major, postice (♀) valde dilatatus, fronte et thorace longe et dense erecte fulvo-hirsutis; capite cum oculis magno; clypeo semicirculari, antice profunde sinuato, castaneo-rufo, fronte nigra; thorace brevi, nigro-fusco, lateribus medio rufis, valde producto-dilatato, dense sat grosse subconfluenter punctato; elytris testaceo-flavis, plaga magna juxta-scutellari castaneo-rufa, nudis basi sparsim setosa excepta, subtiliter sparsim punctulatis, fere lævibus; subtus cum pedibus antennisque flavo-testaceis. Antennæ 10-articulatæ, articulis 3°–5^{m} elongatis, tenuibus, æqualibus, haud perspicue articulatis, 6° et 7° brevibus.

♀. Pygidium basi convexum, rugosum, post medium transverse valde depressum, apice iterum convexo, callosum, læve. Venter convexus, suturis haud deletis, segmento 6° convexo, punctato. Ungues apice fissi, dente inferiore paullo latiore et breviore, magis curvato; basi parum dilatati.

Long. 14 millim.

Hab. Mexico, near Acapulco (*Baron, ex coll. Harford*).

Resembles much species of the genera *Bolax* or *Leucothyreus*.

2. *Antennæ 9-jointed, the sixth joint very short.*

20. **Phytalus bucephalus.** (Tab. X. fig. 15, ♀.)

Parvus, breviter cylindricus, fulvo-testaceus, nudus, nitidus, capite, thorace (lateribus exceptis), scutello vittisque elytrorum duabus (una vaga suturali, altera postero-marginali) castaneo-fuscis (elytris interdum toto fulvo-testaceis); capite magno, sparsim irregulariter grosse punctato, clypeo brevissimo, lateribus oblique rotundatis, margine anteriore medio verticaliter arcuato-reflexo (haud emarginato); thorace post medium rotundato-dilatato, postico citius quam antice angustato, margine grosse crenato; elytris subrugulose punctulatis; pectore femoribusque fulvo-hirtis. Antennæ articulis 3°–5^{m} elongatis, æqualibus, tenuibus, 6° brevissimo.

♂. Pygidium convexum, politum, sparse punctatum, margine apicali reflexo. Venter medio depressus, vage canaliculatus, segmento 5° medio longe parce setoso. Calcaria postica elongata acuta, libera. Ungues curvati, apice fissi, dente inferiore latiore et breviore, apice subtruncato. Antennarum clava cæteris articulis conjunctis longior.

♀. Pygidium a ♂ haud differt. Venter convexus, suturis medio obliteratis, segmento 5° sicut in ♂. Calcaria postica elongata, apice obtusa. Ungues apice latius fissi, dente inferiore deorsum magis curvato.

Long. 10–11 millim.

Hab. Mexico, Parada (*Sallé*). Two examples.

21. **Phytalus ægrotus.**

Anguste oblongus, flavo-testaceus, fronte cum verticeque nigra, thorace medio castaneo; capite cum oculis magno distanter asperato-punctato, clypeo brevi, transversim quadrato, margine alte reflexo, integro, supra valde concavo, sparse punctato; thorace medio mediocriter rotundato-dilatato, discrete punctato, margine antico (cum fronte) erecte hirsuto, cætera superficie glabro; elytris sat dense punctulatis, costulis distinctis; pectore cinereo-flavo villoso.

♂. Pygidium convexum, crebre vel scabrose punctatum, glabrum, basi transversim sulcatum, apice sulcato-marginatum. Venter medio parum depressus, parce setosus, segmento 5° medio densius setoso, 6° transversim perparum depresso. Calcaria postica elongata acuta, libera. Ungues dente inferiore multo breviore, paullo latiore et deflexo, apice obtuso; basi breviter obtuse dentati. Antennarum clava elongatissima, cæteris articulis conjunctis dimidio longior; articulo 5° valde elongato, 6° brevissimo.

Long. 13 millim.

Hab. Mexico, Tepansacualco (*Sallé*).

Var. clypeo lateribus paullo convergentibus, margine minus alte reflexo.

Hab. Mexico, Parada (*Sallé*).

Two examples of the type, both males. The antennæ are elongated both in stem and club, but the club is half as long again as the stem. The var. is to some extent intermediate between this species and *P. bucephalus*; it is barely 11 millim. long.

22. **Phytalus lineatus.** (Tab. X. fig. 16, ♀.)

Anguste oblongus, flavo-testaceus, vertice nigricante, thorace plerumque vitta dorsali (usque ultra scutellum extensa) infuscata, supra glaber, nitidus; clypeo brevi, late et obtusissime rotundato, cum fronte grosse subconfluenter punctato; thorace elytris latiore, antice angustato, lateribus a basi usque ad apicem arcuatis, angulis posticis subrotundatis, supra discrete punctulato; pectore flavo-hirsuto.

♂. Pygidium sat elongatum, subconvexum, sparsim punctatum, apice reflexum. Venter medio late concavus, segmento 5° dense et longe flavo-barbato medio canaliculato, 6° postice valde elevato, apice medio producto, asperato. Tibiarum posticarum calcaria libera, inferiore multo breviore. Ungues basi sat acute dentati, apice fissi, dente inferiore multo breviore, paullo latiore, apice obtuso. Antennarum clava cæteris articulis conjunctis longior.

♀. Pygidium medio depressum, prope basi et apicem convexum. Venter segmentis singulatim convexis et setosis. Ungues sat anguste fissi, dentibus subæqualibus.

Long. 12–16 millim.

Hab. Mexico, Parada, Capulalpam, Peras, Yolos, Juquila (*Sallé*), Cordova, Oaxaca (*Höge*).

This species bears the name (which I have adopted) *Phytalus lineatus*, Reiche (MS.), in the Sallé collection.

We figure a female example from Cordova.

23. **Phytalus stramineus.** (Tab. X. fig. 17, ♀.)

Minor, pallide flavo- (fere albo-) testaceus, capite et thorace paullo rufioribus, glaber, passim discrete punctulatus; clypeo rotundato, margine reflexo, medio leviter sinuato; antennæ articulis 3° et 4° elongatis, 5° dimidio breviore; thorace medio subangulatim leviter dilatato, antice et postice fere æqualiter angustato; pectore mediocriter flavo-hirsuto. Ungues ♂ ♀ profunde fissi, dente inferiore paullo latiore et breviore.

♂. Pygidium convexum, pilifero-punctulatum, margine apicali reflexo et subtus planato. Venter medio late depressus parce erecte pilosus, nitidus, segmento 5° apice arcuatim emarginato, 6° lævi, medio canaliculato. Calcaria postice compressa, libera. Antennarum clava elongata, cæteris articulis conjunctis æqualis.

♀. Pygidium medio depressum vel concavum, sicut in ♂ piliferum, apice magis reflexo. Venter medio lævis, segmento 6° convexo, parum punctato.

Long. 12–13 millim.

Hab. Mexico, Iguala in Guerrero (*Höge*). Three examples.

This and the following differ from the other species of Section II. in the fifth antennal joint being, although subelongate, only half as long as the fourth, instead of being equal or longer.

24. **Phytalus ciudadensis.**

Anguste oblongus, nitidus, flavo-testaceus, capite thoraceque rufis; capite mediocri, oculis magnis, clypeo brevi, lateribus rotundatis nec antice convergentibus, margine antico alte reflexo, medio leviter sinuato, supra dense, fronte sparsim, punctatis; thorace lateribus rotundatis, supra disperse punctulato; elytris discrete punctulatis, paullo rugulosis, ecostatis.

♂. Pygidium sicut in *P. ægroto* crebre rugoso-punctatum, glabrum, basi transversim sulcatum. Venter medio parum depressum, sparsim, segmento 5° longius, setosum, 6° medio transversim paullulum depressum.

Calcaria postica gracilia, libera. Ungues dente inferiore multo breviore, vix grossiore nec deflexo. Antennarum clava valde elongata, cæteris articulis conjunctis longior; articulo 5° quam præcedens longiore.
Long. 10–11 millim.

Hab. Mexico, Ciudad in Durango (*Höge*). Two male examples.

Very closely allied to *P. ægrotus*, but sufficiently distinct by the clypeus being much shorter, broader, and less quadrate, and sinuated on its front margin. The lower tooth of the tarsal claws is also rather longer and narrower. The thorax is clear testaceous-red and not castaneous on the disc as in *P. ægrotus* and its var., which latter partly bridges over the difference between the two species.

25. **Phytalus fissilabris.**

P. bucephalo similis, quoad clypei formam *Lachnosternæ longitarsi* (Say) simillimus; differt inter alia thorace grosse punctato. Parvus, angustus, castaneo-fuscus, pedibus fulvo-testaceis, nudus, fronte thoraceque pilis nonnullis elongatis; clypeo parvo, antice profunde sinuato, lateribus rotundatis, supra grosse punctatis, fronte grosse scabroso-punctata; labro exposito profundissime sinuato; oculis maximis; thorace grossissime disperse punctato; elytris ruguloso-punctatis; pygidio convexo, disperse punctato, apice reflexo; ventris suturis haud deletis subtilibus; antennæ 9-articulatæ; mandibula lata, robusta, apice rotundata.

♂. Venter fere lævis, segmentis 2°–5^{m} convexis, 6° transversim depresso, punctulato. Calcaria postica gracilia, acuta, libera. Ungues apice fissi, dente inferiore paullo breviore apiceque citius acuminato. Antennæ desunt.

♀. Venter convexus, lateribus punctatis. Calcaria postica apice obtusa. Ungues dente inferiore multo breviore. Antennarum clava ovata.

Long. 10–11 millim.

Hab. Mexico, Orizaba (*Sallé*), Las Vigas (*Höge*).

Two examples only. The male, which is imperfect, has more voluminous eyes, and a more deeply sinuated and more reflexed clypeus, than the female, and the forehead and thorax clothed, but not thickly, with long, fine, erect hairs. The short clypeus with its large median sinuation causes the labrum to be prominent and exposed.

3. *Antennæ 8-jointed, the fifth joint very short.*

26. **Phytalus poculifer.**

Parvus, breviter ovatus, livido-fuscus, nitidus; antennis pedibusque fulvo-testaceis, glaber, fronte thoraceque longissime hirtis; clypeo sat elongato-quadrato, profunde concavo, parce punctato, margine alte reflexo, integro, fronte convexa et grosse punctata; thorace ante medium valde dilatato, angulis obtusis, supra sparse mediocriter grosse punctato; elytris æqualiter discrete punctulatis, ecostatis. Mandibula inter labrum et mentum haud exserta.

♂. Pygidium convexum, politum, glabrum, fere læve. Venter lævis, segmento 5° medio penicillato-setoso, 6° margine apicali transversim depresso, punctato. Calcaria postica libera. Ungues dente inferiore multo breviore sed nec latiore nec deflexo; basi dente lato obtuso triangulari.

Long. 8½ millim.

Hab. Mexico (*coll. Bates*).

A single male example, somewhat immature. The concealed mandibles and 8-jointed antennæ would bring the species within the definition of Erichson's genus *Anonetus*;

but the dentition of the claws is widely different, *Anonetus* being defined as having a quadrangular tooth at the base of the claw. It will be seen further on that a section of *Lachnosterna* has also 8-jointed antennæ, and, in some examples but not in others, concealed mandibles, so that the genus is evidently untenable.

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27. **Phytalus** —— ?

Hab. Mexico (*Sallé, ex coll. Sturm*).

Two mutilated specimens of a species with 9-jointed antennæ, named by Sturm *Schizonycha puncticollis*. .

LACHNOSTERNA.

Lachnosterna, Hope, Col. Manual, i. p. 100 (1837); Leconte, Journ. Acad. Nat. Sc. Phil. ser. 2, iii. p. 235 (1856); Kirsch, Sharp, Lansberg, Waterhouse, Quedenfeldt.

Ancylonycha, Blanchard, Hist. des Ins. i. p. 216 (1845); Cat. Coll. Ent. i. p. 132 (1850); Burmeister, Handb. der Ent. iv. 2, p. 308 (1855); Lacordaire, Gen. Col. iii. p. 284 (1856).

Trichestes, Erichson, Naturg. Ins. Deutschl. iii. p. 658 (1848).

Endrosa, Leconte, Journ. Acad. Nat. Sc. Phil. ser. 2, iii. p. 234 [1856] (apud Horn, Trans. Am. Ent. Soc. vii. p. 138 [1878]).

Gynnis, Leconte, l. c. p. 262 (apud Horn, Trans. Am. Ent. Soc. vii. p. 138).

The species with more or less narrowly-cleft tarsal claws being excluded to form the unsatisfactory genus *Phytalus*, a polymorphic host of nearly 200 described species remain, which it is extremely difficult to arrange in natural groups. After trying various courses, I have preferred to take the armature of the claws as a basis of grouping, finding that the result does less violence to the apparent natural affinities of the species than is shown when any other varying character, such as the structure of the antennæ, the parts of the mouth, or the secondary sexual characters, is adopted. I do not wish it to be inferred that the groups are perfectly natural and applicable to the species of other regions; in fact they apply very imperfectly to the *Lachnosternæ* of temperate North America, and not at all to Asiatic species. But neither does the system adopted in Leconte's synopsis of the North-American species suit the forms of the Tropical-American fauna.

The genus is very numerously represented in our region, particularly in Mexico, and judging from the many single specimens of apparently distinct species met with by our travellers, and that continue to arrive, it is highly probable that we are not acquainted with one half the species that exist in the country. The genus seems to diminish in the number of its representatives further south, but many are described from Colombia, Venezuela, and the West Indies; in the plains of the Amazons it is practically unknown, a single damaged example found after a storm being all that I met with during eleven

years' collecting. It reappears, however, in numerous species in South Brazil. In the Old World it is spread over Eastern and South-eastern Asia, and a few species have been described from islands in the Indian Ocean and also from West Africa.

I. *Claws broadly cleft, or with the lower tooth situated above the middle of the claw; base broadly dilated or toothed; the three dentiform processes more or less closely approximated.*

In the species included in this section the margin of the clypeus is generally a little reflexed and notched in the middle, and the thorax coarsely punctured and broadly dilated.

1. **Lachnosterna castaniella.** (Tab. X. fig. 18, ♂.)

L. parumpunctatæ similis; minor, castanea, nitida (capite thoraceque interdum obscurioribus); subtus cum antennis pedibusque fulvo-rufa; clypeo subsemicirculari, margine parum reflexo medio anguste sinuato; capite toto grosse et dense subconfluenter punctato; thorace valde dilatato-subproducto, disperse mediocriter grosse punctato; scutello parce subtiliter punctato; elytris postice paullo ampliatis, sat dense punctulatis, prope suturam rugulosis; pectore fulvo-villoso.

♂. Pygidium apice obtuse truncatum, medio plus minusve late sulcatum, utrinque convexum, glabrum, politum, sparse punctulatum. Venter medio paullo depressus, fere lævis, segmento 5° apice medio plaga parva granulata, margine postice valde arcuatim emarginato, 6° magno, medio depresso, granulato et erecte piloso. Calcaria postica libera. Ungues basi haud dentati sed dimidio basali æqualiter dilatato, dentibus duobus apicalibus subparallelis, inferiore obtuso et multo breviore latioreque. Antennarum clava valde elongata, cæteris articulis conjunctis longior.

♀. Pygidium sicut in ♂, sed longior, basi convexum. Venter convexus, medio lævis, segmento 6° magno, convexo, 5° et 6° setifero-punctulatis. Ungues a ♂ haud diversi, dente inferiore excepto ab apicali magis distanti.

Long. 11–12 millim.

Hab. Mexico, Atenquique in Jalisco (*Höge*). Ten examples.

2. **Lachnosterna heteronycha.** (Tab. X. fig. 19, ♂.)

Parva, oblonga, postice latior, fulvo-castanea, undique sat longe, apud thoracem elytrorumque basin longissime, fulvo-hirsuta, dense (thorace paullo grossius) punctulata; clypeo mediocri subquadrato, lateribus angulisque rotundatis, margine antico paullo reflexo et sinuato, fronte declivi, plana, grosse scabrosa, supra transversim obtuse carinata, occipite lævi polito; thorace post medium angulatim dilatato, antice sinuatim angustato, angulis anticis acutis, posticis subrectis; elytris ecostatis; pectore pedibusque longe hirsutis. Antennæ 10-articulatæ, articulis 3°–5^{m} paullo elongatis, 6° et 7° brevissimis. Ungues apice late fissi, dente inferiore multo latiore, paullo breviore et deflexo; basi 2 posticorum gradatim modice, 4 anteriorum grossissime angulatim, dilatati.

♂. Pygidium convexum, sat dense punctulatum et longe erecte hirsutum, apice explanatum margineque acute reflexo. Venter medio depressus, sat sparsim punctato-setulosus, segmento 5° fovea lata densius punctulata, 6° brevi, grosse punctato, canaliculato. Calcaria postica libera. Antennarum clava cæteris articulis conjunctis longior.

♀. Pygidium sicut in ♂. Venter segmentis 2°–5^{m} sat dense erecte hirsutis.

Long. 12–13 millim.

Hab. Mexico, Yolos (*Sallé*), Mexico city, Jalapa (*Höge*).

A specimen from Mexico city is figured.

3. **Lachnosterna tridens.**

Oblonga (♀), postice dilatata, castanea, breviter, apud frontem et thoracem altius, hirsuta, thorace sat dense et grosse, elytris subtilissime et dense, punctatis; clypeo mediocri transversim quadrato, angulis rotundatis, margine altius reflexo medio depresso et sinuato, fronte paullo convexa, confluenter grosse punctata, occipite lævi; thorace medio valde dilatato, angulis omnibus obtusis sat distinctis, margine crenato. Antennæ 10-articulatæ, articulis 3°–5^{m} paullo elongatis gradatim decrescentibus, 6° et 7° brevibus.

♀. Pygidium parum convexum, setifero-punctulatum, ante apicem unituberculatum, sulcato-marginatum. Venter segmento 6° magno, convexo. Ungues tridentati, dilatatione basali apice acute dentata, dentibus mediano et apicali gradatim longioribus, et omnes æqualiter approximatis.

Long. 17–18 millim.

Hab. MEXICO, Capulalpam, Peras (*Sallé*).

Two examples, both females. This is the only species known to me in which the claws of all the feet have equidistant and similarly-formed acute teeth, differing only in their gradually increased length; the basal tooth is a prolongation of the apical angle of the long and broad basal dilatation.

The species is evidently closely allied to *L. heteronycha*.

4. **Lachnosterna piceola.** (Tab. X. fig. 20, ♂.)

Elongato-ovata, piceo-nigra, elytris paullo rufioribus, supra glabra, nitida, fronte thoracisque margine antico parce longe fulvo-setosis; capite grosse, fronte (decliva) confluenter, punctato, occipite transversim obtuso elevato; clypeo parvo, transverso, utrinque rotundato, margine antico angulatim sinuato et parum reflexo; thorace relative parvo, medio valde dilatato, margine remote crenato, supra disperse sat grosse punctato, angulis posticis acutis, anticis obtusis; elytris sat dense punctulatis, costa interiore obliqua, parum perspicua; pectore fulvo-villoso. Antennæ 10-articulatæ, articulis 3°–7^{m} subæqualibus.

♂. Pygidium convexum, glabrum, æqualiter punctatum, margine apicali reflexo et subtus horizontaliter continuato. Venter medio convexus, politus, lævis, vix medio canaliculatus, segmento 5° apice depresso, punctulato, 6° medio concavo ibique punctulato. Calcaria postica elongata, libera. Ungues apice sat anguste fissi, dente inferiore crassiore breviore curvato deflexo acuto; basi paullo rotundato-dilatata. Antennarum clava mediocris, articulis 3°–7^{m} conjunctis fere æqualis.

♀. Pygidium glabrum, punctatum, basi convexum, apice planum, margine apicali subacuminato valde reflexo et subtus horizontaliter continuatum. Venter convexus, lævis, suturis deletis, lateribus et segmento 5° punctulatis, segmento 6° convexo parciter grosse punctato. Calcaria postica sicut in ♂, sed inferiora, apice obtuso. Ungues valde curvati, apice latius fissi, dente inferiore submediano. Thorax antice crasse marginatus, sulculo profundo.

Long. 14–15 millim.

Hab. GUATEMALA, near the city, altitude 5000 feet (*Salvin*). Two examples only.

5. **Lachnosterna scabrifrons.** (Tab. X. fig. 21, ♀.)

Elongato-ovata, nigra, nitida, glabra (elytris, pedibus antennisque interdum piceo-rufis), ventro piceo-rufo; clypeo transverso, lateribus late rotundatis, margine vix reflexo antice medio angulatim sinuato, grossissime fronteque adhuc grossius subconfluenter punctatis; thorace brevi, medio valde dilatato, distanter crenato, angulis posticis acutis, anticis obtusis, supra sparsissime subgrosse punctato, margine anteriore incrassato; scutello lævi; elytris (♀) postice dilatatis, ruguloso-punctulatis; antennis articulis 3°–6^{m} subelongato-ovatis.

♀. Pygidium basi convexum, apice depressum, margine apicali incrassato-reflexo; glabrum, disperse punctatum. Antennarum clava parva. Ungues dilatati; basi dentati, dente inferiore elongato acuto deflexo ab apice sat distanti.

Long. 16 millim.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Cerro Zunil (*Champion*).

Two examples, both females. Closely allied to *L. piceola*, but differing too much in the outline of the clypeus and in the punctuation of the thorax to admit of the supposition that it is the female of that species. The Guatemalan example is figured.

6. **Lachnosterna leonina.** (Tab. X. fig. 22, ♂.)

L. cribricolli et *L. rugicolli* proxime affinis; differt corpore toto fusco-nigro, antennis pedibusque rufioribus, utroque sexu thorace elytrorumque basi et prope suturam pilis valde elongatis erectis obsitis elytrisque lateribus quoque breviter griseo-pilosis; clypeo parvo, extus sat late rotundato (♂), antice medio late sinuato; thorace medio valde dilatato, antice leviter sinuatim angustato, angulis anticis acutis, grossissime et dense sed parum confluenter punctato; elytris paullo grossius quam in *L. cribricolli*, multo grossius quam in *L. rugicolli*, punctatis, costis sat perspicuis; pectore pallide fulvo-villoso abdomineque lateribus incumbente sat dense pubescentibus. Antennæ 10-articulatæ.

♂. Pygidium mediocriter convexum, nitidum, vage parum profunde punctatum, longe erecte hirsutum, apice glabrum. Venter medio convexus, politus, interdum subtiliter canaliculatus, segmento 5° apice arcuatim emarginato, medio apice dense punctulato, segmento 6° magno, medio area depressa setifero-punctulata. Calcaria postica libera, superiore acuto inferiore subspathulato. Ungues basi quadrato-dilatati, dente mediano cum dente superiore fere paralleli sed illo paullo latiore et breviore, dentibus tribus basi approximatis. Antennarum clava sat brevi.

♀? Pygidium planum, vage rugoso-punctatum, setiferum. Venter medio convexus, lævis, segmento 6° simplici, punctis nonnullis grossis. Clypeus lateribus haud late rotundatis, arcuatus, medio antice sat acute inciso-sinuatus.

Long. 13–16 millim.

Hab. Mexico, Toluca, Peras (*Sallé*).

Two males from Toluca; two females from Peras: the difference in the outline of the clypeus may, therefore, indicate a local variety. In all other points the specimens agree perfectly. They are named *L. foveicollis*, Sturm, in the Sallé collection, but are certainly a different species from the one described under that name by Sturm.

A male specimen from Toluca is figured.

7. **Lachnosterna pubicauda.**

L. leoninæ affinis; differt colore toto rufo-testaceo pygidioque crebre punctulato, et longe pubescente. Thorax antice tenuiter marginatus. Ungues sicut in *L. leonina*, sed basi minus late dilatati.

♂. Pygidium margine apicali valde reflexo. Venter segmento 5° apice arcuatim emarginato, glabro, 6° magno, medio haud depresso, grosse setoso-punctato, longitudinaliter sulcato.

♀. Pygidium apice mediocriter reflexo. Venter segmento 5° parum arcuato-emarginato, 6° breviore, convexo, grosse punctato.

Long. 14–16 millim.

Hab. Mexico, Parada, Oaxaca (*Sallé*).

Three examples. The great difference in the punctuation and pubescence of the pygidium, in both sexes, indicates a species distinct from *L. leonina*, though the form and sculpture of the head, thorax, and elytra are almost exactly similar. The sixth ventral segment in the male shows no trace of the depressed median area, or wide

shallow fovea, which is so definite a character in the two males examined of *L. leonina*. The fine and close punctuation of the pygidium extends very near to the apex, and the pubescence is long and flatly adpressed like that of the propygidium and the sides of the abdomen, but the pubescence is easily abraded. In *L. leonina* the base of the pygidium is clothed with very long, erect hairs, and the apical third is glabrous.

8. **Lachnosterna dulcis.**

L. cribricolli affinis, quoad thoracis foveas grossas simillima; differt corpore ovato, castaneo-fusco fere nigro, antennis pedibusque testaceo-rufis; capite sicut in *L. cribricolli* grossissime confluenter punctato; clypeo subsemicirculari, margine antico angulatim sinuato, fronte longe, thorace longissime, erecto-pilosis; thorace grosse irregulariter parce foveato, spatiis lævibus; scutello impunctato; elytris ovatis, subtiliter punctulatis, juxta suturam solum rugulosis, disco et lateribus sublævibus, pilis longis paucis juxta scutellum exceptis glabris; pectore fulvo-villoso, pedibusque pilis longis fimbriatis.

♂. Pygidium convexum, basi glabrum, apice longissime dense hirtum. Venter convexus, medio lævis, segmento 5° apice declivi, 6° transversim depresso-concavo. Calcaria postica libera. Ungues valde curvati, tridentati, dente apicali multo longiore, acuto. Antennarum clava parva.

Long. 15 millim.

Hab. Mexico, Toluca (*Höge*). Three males.

The three teeth of the claws are, as in *L. cribricollis*, separated only by narrow clefts, the apical one being much the longest, the basal quadrate. In colour and in the very long, erect hairs of the anterior part of the body *L. dulcis* resembles *L. leonina*; but it is a broader and much smoother insect, and the elytra are destitute of the short hairs distinguishing *L. leonina*.

9. **Lachnosterna xanthe.**

L. cribricolli affinis; multo minor et minus elongata, ovata, fulvo-testacea, subnitida, capite et thorace rufioribus longe pilosis, elytris (margine fimbriata excepta) glabris, sat dense punctulatis, ecostatis; capite grosse confluenter punctato; clypeo utrinque sat late rotundato, margine antico elevato, medio sinuato-depresso; thorace sicut in *L. cribricolli* et *L. dulci* grosse foveato sed foveis plerumque discretis, spatio amplo utrinque prope basin lævissimo.

♂. Pygidium convexum, sat dense punctulatum et breviter erecte pilosum. Venter medio paullo depressus, politus, sparsissime punctulatus, interdum canaliculatus, segmento 5° apice declivi, dense punctulato, apice arcuatim emarginato, 6° transversim depresso granulato. Calcaria postica libera. Ungues sicut in *L. dulci*. Antennarum clava elongata, articulis 2°–7^{m} subæqualis.

Long. 12 millim.

Hab. Mexico, Durango city, Pachuca in Hidalgo, Chihuahua city (*Höge*).

Four examples, all males.

10. **Lachnosterna cribricollis.** (Tab. X. fig. 23, ♂.)

Ancylonycha cribricollis, Blanch. Cat. Coll. Ent. i. p. 133 [1].

Hab. Mexico [1], Guanajuato, San Luis Potosi (*Sallé*), Mexico city (*Flohr*).

Among the pale reddish-testaceous species this is distinguished by its relatively small and extremely coarsely and irregularly punctured thorax. The tarsal claws, with the

exception that those of the intermediate pair are not distorted, are nearly as in *L. ravida* and *L. testaceipennis*, that is, they have a broad basal tooth, a less broad and longer median tooth, and a long sharp and curved apical tooth, the intervals between all of which are nearly of the same width. In the female, as usual in the group, the median tooth is less broad and more gradually pointed than in the male, and the distances between the three teeth are considerably wider. The other sexual differences are :—

♂. Pygidium parum convexum, sparsim ruguloso-punctatum et setiferum, margine apicali valde reflexo. Venter medio politus, lævis, convexus, medio vage canaliculatus, interdum depressus et profundius canaliculatus ; segmento 5° et 6ⁱ plaga mediana dense et aspere pilifero-punctatis, 6° magno, plano, margine apicali medio inciso. Antennarum clava parva, ovata.

♀. Pygidium planum, apice prope marginem (haud reflexum) convexum. Venter convexus, lævis, suturis late deletis, segmentis 5° et 6° planis, politis, sparsim punctatis.

Long. 13–18 millim.

Besides a specimen named *L. cribricollis*, Blanch., there are others in the Sallé collection labelled *Lachnosterna testacea*, Sturm (MS.).

The *Ancylonycha cribricollis*, Redt., in Hügel's 'Kaschmir' (1844) is anterior in date to Blanchard's name (1850), but is wrongly placed in the genus, being a *Schizonycha*.

11. **Lachnosterna rugicollis.** (Tab. X. fig. 24, ♀.)

Ancylonycha rugicollis, Sturm, Cat. p. 123[1].

L. cribricolli (Blanch.) affinis, sed differt capite thoraceque piceo-nigris, hoc multo densius grossissime confluenter punctato, etc. Elongato-oblonga, postice latior, subtus cum pedibus antennisque testaceo-rufa, capite thoraceque piceo-nigris, elytris fulvo-testaceis, his multo subtilius et sparsius quam in *L. cribricolli* punctatis, ecostatis ; clypeo fere sicut in *L. cribricolli*, brevi rotundato, medio sinuato, sed sutura frontali vix impressa ; thorace medio valde angulatim dilatato, margine grosse crenato, supra erecte piloso.

♀. Pygidium fere planum, erecte pilosum. Ungues tridentati, dente basali lato rotundato, mediano paullo distante elongato acuto, apicali longiore et acutiore.

Long. $14\frac{1}{2}$–$15\frac{1}{2}$ millim.

Hab. Mexico [1] (*Sallé, ex coll. Sturm*).

Three examples, two of which bear the name in Sturm's handwriting; one of them is possibly a male, but the apex of the abdomen is wanting.

The species is certainly distinct from the wholly rufo-testaceous *L. cribricollis*, Blanch., under which it is placed as a synonym in the Munich Catalogue.

12. **Lachnosterna foveicollis.**

L. leoninæ valde affinis. Magis ovata, nigro-picea, elytris glabris, sublævibus, sparsissime et subtiliter punctulatis, clypeo paullo magis elongato ; thorace haud differt.

♂. Pygidium mediocriter convexum, apice longissimo pilosum, basi glabrum. Venter medio convexus, lævis, vage canaliculatus, segmento 5° apice haud punctulato, 6° quam in *L. leonina* paullo breviore, valde concavo, subtiliter ruguloso. Ungues sicut in *L. leonina*, sed dente basali majore, triangulari.

Long. 15 millim.

Hab. Mexico (*Sturm, in coll. Sallé*).

I find in our collections no other example of this species than the single specimen labelled as above by Sturm in the Sallé collection.

13. **Lachnosterna punctulicollis.** (Tab. X. fig. 25, ♂.)

Oblonga, postice paullo dilatata, elytris glabris, castaneis, thorace nigro subopaco, minute et dense punctulato, antice, medio et postice punctis grossis nonnullis setiferis transversim positis; capite rufo-castaneo, grosse scabroso, clypeo brevi, rotundato, antice medio late sat profunde sinuato, supra medio (ante suturam frontalem) transverse carinato, vertice transversim obtuse carinato; thorace medio valde dilatato et postice valde angustato; elytris ecostatis, sat dense punctulatis; pectore fulvo-villoso. Ungues omnes (♂ ♀) basi grosse quadrato-dentata (dente parum elevato), dente mediano lato, apice acuto, dente apicali longiore, acutiore.

♂. Pygidium parum convexum, disperse punctatum et erecte pilosum, margine apicali reflexum. Venter valde convexus, medio politus, segmento 5° apice valde declivi sed glabro, 6° transversim concavo, subtiliter rugoso, medio longitudinaliter carinato. Calcaria postica libera. Antennarum clava sicut in ♀ ovata.

♀. Pygidium planum, paullo concavum, sed apice sensim elevato. Venter sicut in ♂, sed segmento 6° convexo, polito, parce grosse punctato.

Long. 15–16 millim.

Hab. Mexico, Yolos (*Sallé*). Three examples.

Allied to *L. cribricollis*, though differing in so many important points. The carinated clypeus, though the carina is not very sharply defined, betrays an affinity towards the Old-World *Schizonychæ*.

14. **Lachnosterna parumpunctata.**

L. puncticolli affinis, sed differt thorace polito, sparsissime punctato, etc. Oblonga, postice dilatata, nuda, capite castaneo-rufo, thorace nigro, lateribus castaneo-rufis, elytris castaneo-fuscis, sat dense punctulatis, ecostatis, antennis, corpore subtus pedibusque fulvo-castaneis; clypeo brevi rotundato, margine antico elevato, medio profunde sinuato, grosse confluenter punctato, linea elevata transversa obsoleta, fronte grosse scabrosa, vertice elevato lævissimo; thorace medio valde dilatato subproducto; pectore fulvo-hirto. Antennæ 10-articulatæ.

♂. Pygidium parum convexum, grosse rugoso-punctatum, nudum. Venter convexus, medio lævis, segmento 5° medio aspere setifero-punctulato, margine postico arcuatim emarginato, segmento 6° medio lato aspere granulato canaliculato. Calcaria postica elongata, libera. Ungues basi valde quadrato-dilatati, dente mediano lato, apice acuto, dente apicali graciliore, dentibus omnibus basi approximatis. Antennarum clava ovata.

Long. 14 millim.

Hab. Mexico, near Acapulco (*Baron, ex coll. Harford*).

II. *Dentition of claws as in* I.; *but those of the middle feet of the male deformed, the exterior claw being abruptly bent, and its lower tooth enlarged and projecting laterally.*

15. **Lachnosterna ravida.** (Tab. XI. fig. 1, ♂.)

Ancylonycha ravida, Blanch. Cat. Coll. Ent. i. p. 136[1].

Hab. Mexico[1], Orizaba, Juquila, Cordova, Tepansacualco, Peras, Parada, Yolos (*Sallé*), Oaxaca (*Sallé, Höge*), Jalapa, Las Vigas (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*).

The unmeaning phrases which Blanchard thought sufficient to distinguish this species from the similarly-coloured *L. testaceipennis* apply equally well to the females of both species. According to the examples named *L. ravida* (to all appearance

correctly) in the Sallé collection, the species offers well-marked distinctive characters in both sexes.

♂. Pygidium mediocriter convexum, disperse punctatum. Venter medio depressus segmentisque 2°–5^{m} densissime erecte pilosis, 5° margine postico medio recte truncato. Calcaria postica sat gracilia, libera. Ungues basi bidentati, dente inferiore recta ad dentem magnum basalem approximato; ungues intermedii dispares, exteriore majore, abruptius curvato et extus lobato.

♀. Pygidium planum, triangulare, apice paullo simpliciter convexo ("pygidio conico," Blanch.), disperse punctatum, nudum. Venter breviter sat sparse setosus, politus. Ungues basi dente magno sed dente normali inferiore magis distante, longiore et acutiore.

The claws are remarkable for the large and more or less quadrangular dilatation of their base, in both sexes. In the male they are further distinguished by the ordinary tooth lying nearer the base and being separated from the dilatation only by a narrow cleft, the tooth also being shorter and straighter than usual. In the female the ordinary tooth lies nearer to the middle of the claw, and is separated from the dilatation by a wide interval. The distorted curvature of the left claw in the middle tarsi is a further curious structure.

L. ravida resembles almost exactly *Phytalus obsoletus* in colour and in sexual characters, with the exception of those of the tarsi and claws.

We figure a male example from Oaxaca.

16. **Lachnosterna dentex.**

L. ravidæ affinis, unguibus similibus; sed differt corpore erecte piloso, etc. Minor, oblongo-ovata, rufo-testacea, nitida, erecte pilosa; antennarum clava pallidior; clypeo concavo, margine antice elevato nec sinuato; thorace disperse punctato; elytris punctulatis, ecostatis; pectore fulvo-villoso.

♂. Pygidium mediocriter convexum, sat dense, apice versus parcius, punctulatum, erecte pilosum. Venter medio depressus, subnitidus, sparsim setosus, segmento 5° apice medio densius aspere setifero-punctato. Calcaria postica elongata, libera. Ungues valide tridentati; intermedii sicut in *L. ravida* difformes, ungue exteriore abrupte curvato et extus dente elongato.

Long. 16 millim.

Hab. Mexico, Milpas in Durango (*Forrer*), Guanajuato (*Sallé*).

Two examples, both males.

The claws are toothed similarly to those of *L. ravida*, but the apex of the claw is not so elongated and distant from the lower tooth, so that the dilated basal and the lower and the upper teeth are nearly equidistant. The bent exterior claw of the middle tarsi has on the outer side a longish projection, which is no other than the median tooth diverted laterally out of its true position; this tooth is here of moderate length, but longer and sharper than in *L. ravida*.

A single example of a *Lachnosterna* found by Herr Höge at Ciudad in Durango is possibly the female of this species.

17. **Lachnosterna anomaloides.** (Tab. XI. fig. 2, ♂.)

L. ravidæ affinis, unguibus similibus; sed differt elytris incumbenti-griseo-pilosis. Elongato-ovata, fulvo-testacea, capite thoraceque rufis; clypeo concavo, margine antico elevato integro; thorace disperse punc-

tato, erecte fulvo-piloso; elytris punctulatis ecostatis, breviter griseo-pilosis, pilis nonnullis longioribus erectis prope basin et suturam; pectore fulvo-villoso.

♂. Pygidium convexum, sat dense piloso-punctatum. Venter medio depressus et vage canaliculatus, segmentis medio erecte pilosis, 6° medio lato, fere plano, canaliculato. Calcaria postica elongata, libera. Ungues apice prolongati, recti, dente basali magno, inferiore robusto, subrecto; intermedii difformes, ungue exteriore validiore, torto, abrupte inflecto et extus appendiculato. Antennarum clava valde elongata, cæteris articulis conjunctis longior.

♀. Pygidium medio umbonatum. Venter convexus, erecte pilosus. Ungues dente inferiore submediana acutiore et curvato, basali sicut in ♂; intermedii normales.

Long. 14–15 millim.

Hab. MEXICO, Ciudad in Durango (*Forrer*, *Höge*), Toluca (*Höge*).

The displaced median tooth of the male middle claws is in this species greatly elongated, and looks like a third claw.

A male example from Ciudad is figured.

18. **Lachnosterna macrophylla.** (Tab. XI. fig. 3, ♂.)

L. anomaloidi proxime affinis. Breviter oblongo-ovata, castaneo-fusca, elytris breviter incumbenti-griseo-pilosis, fronte, thorace elytrorumque basi longissime hirsutis; clypeo transversim quadrato, profunde concavo (marginibus integris alte reflexis), sparsim punctato; thorace postice haud angustato, angulis posticis acutis, nitido, forte punctato; elytris punctulatis; pectore fulvo-villoso.

♂. Pygidium convexum, longe erecte hirsutum. Venter medio depressus vel concavus, sparsim setosus, segmento 5° apice medio et 6° (medio canaliculato) paullo densius asperato-punctatis et setosis. Calcaria postica elongata, libera. Ungues tridentati, apice (dente apicali) multo longiore et acutiore, dente inferiore latiore et breviore, basali magno triangulari; intermedii difformes, sinistro abrupte curvato et apice prolongato. Antennarum clava pallide fusca, longissima, cæteris articulis longior, articulis 5°–7^{m} brevibus, intus acute productis.

Long. 12–14 millim.

Hab. MEXICO, near the city (*Flohr*). Many examples, all males.

Agrees closely in most of its characters with *L. anomaloides*, and, in the clothing of the ventral surface, especially with the variety of that species; but the general form is totally different, being much shorter and relatively broader—this, together with the long hairs of the anterior part of the body, being constant in numerous examples, there can be little doubt that the species is distinct.

19. **Lachnosterna dasypoda.** (Tab. XI. fig. 4, ♂.)

Sat anguste elongato-oblonga, nitida, tenuiter subsparsim erecte longipilosa et disperse grossius punctata; castaneo-rufa, elytris fulvo-testaceis, capite nigro; capite grossissime confluenter punctato, oculis maximis, clypeo semicirculari, margine antico reflexo, integro (in ♂ interdum) leviter sinuato; thorace minus transverso, mediocriter medio rotundato-dilatato margineque crenulato, sat abundanter sed distanter subgrosse punctato; pectore fulvo-villoso. Pedes elongati, validi longipilosi, tarsis subtus densius et brevius pilosi.

♂. Pygidium valde convexum, politum, longissime erecte fulvo-pilosum, punctis minutis. Venter medio concavus et canaliculatus, sat dense setosus, suturis late deletis, segmento 6° lævi, medio transversim concavo, margine anteriore incrassato medio late interrupto. Calcaria postica elongata, libera. Ungues dimidio basali intus dilatato denteque mediano (a dilatatione haud separato) parvo acuto; intermedii difformes, magis curvati exterioreque basi valde irregulariter dilatato, interiore normali. Antennarum clava valde

elongata cæteris articulis conjunctis longior, articulis 5°–7^{m} brevissimis, intus acute productis. Clypeus transversus, margine antico alte reflexo medio leviter sinuato.

♀. Pygidium medio prope apicem tuberculo valido compresso-conico. Venter medio glaber, segmento 5° postice (sicut lateribus) punctulato. Ungues omnes dente mediano elongato, curvato, a dilatatione basali distanti.

Long. 20–24 millim.

Hab. Mexico, Puebla, Tuxtla, Chiapas (*Sallé*), Las Vigas (*Höge*); Guatemala, Torola (*Champion*); Costa Rica (*Van Patten*).

Belongs to the *L. ravida* group, of which it is the largest known member. *L. dasypoda* approaches nearest to *L. macrophylla* in pubescence; but in the rather ample subsemicircular clypeus it differs from all its allies.

In the male the median tooth of the claws at its base forms part of the wide dilatation of the basal half of the claw, and is small, triangular, and acute; the basal tooth is not angular but gradually rounded, so that it appears separated by a considerable interval from the median tooth; the apex remains for a long distance free. In the female the median tooth has the same position as in the male, but is much longer and not greatly different in form from the apical tooth, from which it is separated by a much shorter interval. In the other species of the group the form and position of the claw-teeth are different, the basal tooth, especially in the male, being angular and separated from the median tooth by a narrow cleft.

A male from Tuxtla is figured.

20. **Lachnosterna polyphylla.** (Tab. XI. fig. 5, ♂.)

L. ravidæ similis, sed valde differt antennarum clava valde elongata et quinque-laminata, oblonga, fulvo-testacea, thorace rufo, nitido, fronte thoracisque margine antico longe erecte setosis; clypeo parvo, antice angustato, apice obtuse truncato angulis rotundatis, margine mediocriter reflexo vix sinuato, toto capite confluenter punctato; thorace medio modice dilatato, haud dense punctulato; elytris ruguloso-punctulatis.

♂. Pygidium versus apicem subconice convexum, sparse (versus apicem longius et densius) pilifero-punctatum. Venter medio depressus, nitidus sed pilosus, segmento 6° depresso, medio canaliculato, longius et densius piloso. Calcaria postica libera. Ungues basi quadrato-dentati, dente mediano versus basin curvato-inclinato, apicali longius libero; intermedii ♂ ungue exteriore difformi denteque mediano valde elongato extruso. Antennarum clava pentaphylla, cæteris articulis conjunctis fere duplo longior, articulis 4° et 5° intus paullo productis, acutis, 6° vix abbreviato, 7° paullo abbreviato et attenuato, 8°–10^{m} æqualibus.

Long. 16 millim.

Hab. Mexico (*Sallé*). One example, male.

21. **Lachnosterna heterophylla.**

L. polyphyllæ proxime affinis, antennarum clava pentaphylla sed articulo 7° multo abbreviato. Fulvo-testacea, nitida, thorace rufo; clypeo paullo longiore, antice angustato, margine altius reflexo medio sat profunde sinuato, supra concavo, punctato, medio lævi; fronte thoracisque margine antico longe erecte setosis; thorace medio perparum dilatato, sparsim punctulato; elytris ruguloso-punctulatis.

♂. Pygidium regulariter convexum, glabrum, parum punctatum. Venter medio concavo depressus, erecte pilosus, segmento 6° medio valde canaliculato. Calcaria postica libera. Ungues sicut in *L. polyphylla*,

sed basi oblique triangulariter grosse dentato nec quadrato. Antennarum clava pentaphylla, articulo 6° sat abbreviato, 7° parvo et tenui, 8°–10^{m} æqualibus.

Long. 14 millim.

Hab. Mexico (*coll. Bates*). One male example only.

The first joint of the 5-jointed antennal club is one third shorter than joints 8–10, and the second is only one sixth the length of those joints. The similarity between this species and the preceding is so great that I should have been inclined to consider the change in the proportionate lengths of the leaflets of the antennal club as due to variation or aberration, had it not been for the different form and clothing of the pygidium and the shape of the clypeus.

III. *Claws broadly cleft; base moderately dilated; lower tooth very broad and strongly curved, and denticulated on its lower edge.*

22. **Lachnosterna testaceipennis.** (Tab. XI. fig. 6, ♂.)

Ancylonycha testaceipennis, Blanch. Cat. Coll. Ent. i. p. 134[1].

Hab. Mexico[1], Puebla, Cordova, Toxpam, Tlatingo, Orizaba, Juquila (*Sallé*), Las Vigas, Jalapa, Tula (*Höge*), Oaxaca (*Sallé*, *Höge*); Guatemala (*Sallé*), Coban (*Champion*); Costa Rica (*Rogers*).

Many examples in the Sallé collection under the above name agree with Blanchard's description of this insect. It can be best distinguished from the other numerous pale or reddish-testaceous species of medium size (15–18 millim.) by the structural peculiarities of the sexes, which are as follows:—

♂. Pygidium convexum, nudum, grosse sed haud profunde rugoso-punctatum. Venter medio anguste depressus, nudus, politus, segmento 4° apice medio et 5° toto medio dense aspere rugulosis, 6° late transversim depresso, grossius rugoso-punctato, interdum medio canaliculato. Calcaria postica libera, sed minus elongata laminato-compressa. Ungues dente inferiore multo breviore et latiore, apice truncato subhamato margineque inferiore plus minusve denticulato; basi usque ad dentem æqualiter dilatata. Antennarum clava elongata.

♀. Pygidium paullo elongatum, rugoso-punctatum, breviter setosum, margine apicali medio verticaliter plicato et fasciculato-setoso. Venter medio politus, interdum canaliculatus, segmento 5° postice et 6° (convexo) setifero-punctatis. Calcaria postica brevia et late compressa. Ungues dente inferiore submediano lato sed acuminato, margine inferiore denticulato.

In most examples of the very numerous series examined the surface is dull, and, the thorax especially, pruinose; but in others from the same localities the surface is glossy without trace of pruinosity.

IV. *Lower tooth of the claws long, acute, and distant from the apex; basal tooth small.*

1. *Lower spur of the hind tibiæ connate.*

23. **Lachnosterna rorulenta.** (Tab. XI. fig. 7, ♂.)

Ancylonycha rorulenta, Burm. Handb. der Ent. iv. 2, p. 331 [1].

Phytalo pruinoso similis, sed major et robustior. Oblonga, fulvo-castanea, pruinosa, pectore fulvo-hirsuto; clypeo sat parvo, subsemicirculari, medio antice sinuato, cum fronte subconfluenter punctato; thorace valde disperse rotundato-punctato, angulis posticis fere rectis; elytris punctulatis, costis vagissimis haud elevatis, lævioribus, stria punctata suturali (postice excepto) parum impressa.

♂. Pygidium parum convexum, apice fimbriato excepto nudum, disperse punctulatum. Venter convexus, medio fere lævis, vage canaliculatus, segmento 5° apice medio depresso et punctulato, 6° antice et postice carinato medio sulco transverso ruguloso. Calcar posticum inferior breve unciforme infixum. Ungues dente inferiore submediano late acuto, superiore valde curvato; basi obtuse dilatati. Antennarum clava sicut in ♀ ovata.

♀. Elytra versus suturam et apicem longissime erecte pilosa. Pygidium dimidio apicali medio depresso-planatum et utrinque elongato-callosum. Venter convexus, politus, suturis vix deletis, segmento 6° basi convexo, lævi, apice transverse depresso et grosse punctato. Calcaria postica sat elongata et acuta. Ungues dente inferiore submediano, elongato.

Long. 20–22 millim.

Hab. Mexico, Las Vigas (*Höge*); Guatemala, Torola (*Champion*); Costa Rica (*Van Patten*).—South America, Venezuela [1].

Ten examples, besides one male from Merida, Venezuela, whence Burmeister's specimens were derived. The Costa Rican specimen is figured.

24. **Lachnosterna chiriquina.**

L. rorulentæ affinissima, forsan ejus varietas localis. Fulvo-testacea minus pruinosa, thorace polito, nudo, paullo densius punctato. Quoad capitis formam simillima; sed ♀ pygidio valde differt.

♂. Pygidium paullo convexum, politum, confuse punctatum, postice medio canaliculatum. Venter sicut in *L. rorulenta* ♂ convexus, medio vage canaliculatus, sed differt subtiliter punctulatus velut coriaceus; segmento 5° apice depresso et densius punctulato, 6° transversim bicarinato. Calcar posticum inferior parvum infixum. Ungues dente inferiore submediano exstanti acuto elongato.

♀. Pygidium subtriangulare, apice bimammillatum. Venter omnino punctulatus, segmento 6° convexo, basi lævi, apice punctato. Ungues sicut in ♂.

Long. 20–22 millim.

Hab. Panama, Volcan de Chiriqui (*Champion, Trötsch*). Seven examples.

25. **Lachnosterna parvisetis.**

L. rorulentæ proxime affinis. Obscurius rufo-fusca, pruinosa, supra punctis omnibus seta minuta instructis; clypeo minore, citius rotundato plerumque densius punctato.

♂. Pygidium parum convexum, nudum, medio postice canaliculatum. Venter calcaria postica et ungues sicut in *L. rorulenta.*

♀. Pygidium fere sicut in *L. rorulenta* ♀, apice late depressum, subconcavum, nitidum, utrinque callosum. Elytra sparsim longe erecte pilosa.

Long. 20–25 millim.

Hab. Mexico, Teapa, Cordova (*Sallé*).

Three examples, besides one in my own collection received from Paris under the name *L. rorida*, Burm., from which it is evidently distinct, and which is, moreover, a South-Brazilian insect. I have seen only one male (from Teapa); it differs slightly from the three females, and is much smaller (20 millim., the females being 25 millim.), and seems intermediate between this species and *L. rorulenta*, but the punctures have each a small grey seta.

26. **Lachnosterna cinnamomea.** (Tab. XI. fig. 8.)

Ancylonycha cinnamomea, Blanch. Cat. Coll. Ent. i. p. 134[1].

Hab. Mexico [1], Cordova (*Sallé*).

Extremely near *L. parvisetis*, but glabrous, without pruinose bloom, and the punctures naked. Colour castaneous, shining. In the male the pygidium is polished and flattened towards the apex; the lower hind spur is rather longer than in *L. rorulenta*, but soldered to the tibia; the ventral segments are sculptured precisely as in that species. In the female the pygidium differs in the apical area being more depressed and margined laterally by much higher ridges.

2. *Lower spur of the hind tibiæ freely articulated.*

27. **Lachnosterna sturmi.** (Tab. XI. fig. 9, ♀.)

Phytalo pruinoso similis. Anguste oblonga, subcylindrica, fuligineo-nigra, elytris plerumque rufescentibus, supra toto pruinosa; pedibus castaneis, politis; clypeo antice medio profunde subacute sinuato, capite toto dense punctato; thorace elytrisque disperse umbilicato-punctulatis, punctis (prope elytrorum apicem breviter setosis exceptis) nudis; pectore minus dense incumbenti-fulvo-piloso; antennis castaneis, clava fulvescente.

♂. Pygidium mediocriter convexum, apice reflexum, disperse umbilicato-punctatum, nudum. Venter medio canaliculatus, sublævis, segmento 5° apice medio depresso ibique aspere punctato, polito, 6° transversim subdepresso rugoso. Calcaria postica libera, ensiformes, inferiore multo breviore. Ungues dente inferiore valido haud breviore, submediano; basi parum dilatati. Antennarum clava paullo elongata, articulis 2°–7ᵐ æqualis.

♀. Pygidium subtriangulare, convexum, lateraliter subcompressum, apice reflexum. Venter medio sparse lateribus densius punctulato-pilosus, segmento 6° convexo, postice grossius punctato. Ungues sicut in ♂.

Long. 18–22 millim.

Hab. Mexico, Cordova, Orizaba, Tuxtla, Playa Vicente (*Sallé*).

Closely resembling in form and sculpture *Phytalus pruinosus*, but widely differing in the spurs of the hind tibiæ of the male, the form of the tarsal claws, and other important points of structure. It appears to have been hitherto confounded with *P. pruinosus* (Burm.); it being so named in the Sallé collection (by Sturm) and in my own from specimens received years ago from Paris. I have examined nine examples.

The clypeus is a little more deeply notched in the middle of the front margin than in *P. pruinosus*, and the sides are less convergent.

Our figure is taken from a female specimen from Tuxtla.

28. **Lachnosterna gigantea.** (Tab. XI. fig. 10, ♂, var.)

L. lebasii (Blanch.) affinis; maxima, oblonga, rufo-fusca vel nigra, capite, thorace, scutello, elytris et pygidio subtilissime densissime punctulatis et breviter incumbente pubescentibus; capite grossius subalveolato-punctato, clypeo mediocri, obtuse rotundato, margine elevato medio breviter sinuato vel integro.

♂. Pygidium convexum, margine apicali acute reflexo fimbriato. Venter subtilissime punctulatus et pubescens, medio canaliculatus, suturis medio angulatis; segmento 5° medio contracto, margine apicali utrinque sinuato, spatio triangulari mediano granulato-ruguloso, lateribus utrinque transversim uniplicatis; segmento 6° brevi, transversim anguste concavo (medio carinato), marginibus elevatis, incrassatis, posteriore medio fisso. Calcaria postica elongata, libera. Ungues fere sicut in *L. setifera*, dente mediano elongato (denti apicali æquali); basi mediocriter dentato-dilatati. Antennarum clava valde elongata cæteris articulis multo longior, articulis 5°–7^{m} intus acute productis.

♀. Pygidium sicut in ♂, sed apice paullo prolongatum. Venter subtilissime punctulatus et pubescens, segmento 5° cæteris longiore, postice transversim canaliculato subplicato, 6° plano crebre punctato.

Long. 22–28 millim.

Hab. Nicaragua, Chontales (*Belt*, *Janson*); Panama, Chiriqui (*Trötsch*), Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Seven examples, of which three from Chiriqui are black or brownish-black, including the legs and antennæ; the others are castaneous (including the antennæ and legs); one (from Chontales) differs from the rest in having but a slight trace of sinuation in the anterior margin of the clypeus. In all other respects the specimens perfectly agree.

A Chontales example is figured.

29. **Lachnosterna setifera.** (Tab. XI. fig. 11, ♂.)

Ancylonycha setifera, Burm. Handb. der Ent. iv. 2, p. 335 [1].

Hab. Mexico [1], Presidio (*Forrer*), Orizaba, Juquila (*Sallé*), Jalapa (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Volcan de Atitlan, Pantaleon, Zapote, Dueñas (*Champion*); Panama, Chiriqui (*Ribbe*).

Distinguished from *L. crinalis* by the sixth ventral segment in the male having its anterior margin raised and dilated above, so as to impend slightly over the concave centre of the segment, and cleft in the middle. This structure is no doubt that meant by Burmeister by the phrase "die analgrube mit höher, in der mitte gespaltener Querfalte am Vorderrande." A similar "fold" is observed in *L. longipilosa* ♂, but there is a difference between the two species, the fold being biarcuated in *L. setifera*, and produced in the middle, the margin of the preceding (fifth) segment being correspondingly produced; in *L. longipilosa* the margins of both segments are straight. In *L. crinalis* the fore margin of the sixth segment is somewhat thickened but not raised.

L. setifera is further distinguished by the opaque and very faintly punctured pygidium, which is rather densely clothed with erect greyish hairs, the tip in some examples being smooth and shining. The claws have their well-developed lower tooth (a little longer and broader in the female than in the male) very nearly in the middle, its lower edge being finely denticulated; they have only a slight angular dilatation at the base, and there is a considerable interval between the dilatation and the tooth.

The clothing of the upper surface consists of obliquely-planted grey hairs with a few longer erect hairs, and in some examples extremely long hairs, especially towards the base of the elytra.

The length varies from 17 to 25 millim., but the great majority of the examples measured are about 20 millim. The following are varieties :—

Var. 1 (*L. menetriesi*, Blanch., Burm.?). Brevius et latius ovata, fusco-nigra, dense et regulariter breviter griseo-pilosa, pedibus abdomineque interdum nigris.

Hab. Guatemala, Volcan de Atitlan, Pantaleon (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*); Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).

Var. 2. Minor (15 millim.); fusco-nigra, brevissime sat dense subrecte griseo-pilosa, clypeo margine alte elevato pygidioque subnitido, perspicue punctulato; unguibus basi latis.

Hab. Panama, near the city (*Champion*). One male only, with the characteristic form of the apical ventral segments very conspicuously developed.

Var. 3. *L. trötschi.* Postice dilatata, fusco-rufa, capite thoraceque exceptis fusco-nigris; clypeo margine antico medio depresso subsinuato, pubescentia tota fulva nec grisea. Long. 20 millim.

Hab. Panama, Chiriqui (*Ribbe*). Three examples only.

We figure a typical male from Jalapa.

30. **Lachnosterna crinalis.**

Ovata, supra longe et dense, sed breviter, pilosa, pilis longioribus erectis intermixtis, thorace apice elytrisque basi pilis nonnullis longissimis, castaneo- vel nigro-fusca, elytris subopacis; clypeo transverso, antice obtusius rotundato, supra concavo, nitido, sparsim haud profunde punctato, fronte dense rugoso-punctata; thorace subtiliter discrete punctato, linea medio-dorsali lævi, medio mediocriter dilatato margineque crenulato; elytris punctulatis, ecostatis, subpruinosis; pectore fulvo-hirto.

♂. Pygidium mediocriter convexum, sat dense æqualiter punctato-pilosum. Venter medio canaliculatus, opacus, breviter sat dense punctulato-setosus, suturis 2ª et 3ª medio antice angulatis, segmento 5° medio granulato, apice transverso, depresso et margine medio longitudinaliter canaliculato, 6° medio concavo granulato. Calcaria postica elongata, libera. Ungues dente mediano sat valido paullo curvato acuto, inter dentem et basin latiores. Antennarum clava articulis 2°–7ᵐ conjunctis haud longior.

Long. 16–17 millim.

Hab. Mexico, Puebla, Tlatingo (*Sallé*). Two examples, both males.

Approaches the *L. integra* group, but differs in the clypeus being transverse and obtusely rounded, not semicircular, and in the stronger median tooth of the claws, this tooth not lower than the middle. The hairs of the upper surface are also longer, finer, and a little more erect.

31. **Lachnosterna ——?**

Hab. Nicaragua, Chontales (*Belt*).

A single example (♀) of a distinct species.

32. **Lachnosterna ——?**

Hab. Guatemala, Chacoj in Vera Paz (*Champion*).

Also a single female example of an apparently distinct species allied to *L. setifera*.

33. **Lachnosterna ——?**

Hab. Mexico (*coll. Bates*).

A single example (♀) received from Paris many years ago under the name of *L. lanuginosa*, Dej. (Cat.). It is very distinct in being clothed with very long shaggy pile, but apparently belongs to the *L. setifera* group; without a knowledge of the other sex it would be useless to name and describe it.

34. **Lachnosterna setidorsis.**

Anguste oblonga, subovata, fulvo-castanea vel obscure fusca, pube brevi subincumbente et pilis elongatis erectis sat dense vestita, apud elytra pilis elongatis supra totum discum sublineatim seriatis; thorace, scutello, elytris et pygidio subtiliter et dense punctulatis; clypeo obtuse rotundato, sparsim haud profunde punctato, margine integro valde elevato, fronte grosse confluenter punctata et erecte longe setosa.

♂. Pygidium valde convexum, erecte pilosum, pilis longioribus intermixtis. Venter medio longitudinaliter concavus, pilifero-punctulatus, segmento 5° apice recto, medio transversim uniplicato, 6° brevi transversim concavo, margine anteriore incrassato et medio late interrupto. Calcaria postica libera. Ungues fere sicut in *L. setifera*, dente mediano valido (apicali subæquali), basi obtuse dentata.

♀. Pygidium magis elongatum et triangulare, fere planum, cæteris sicut in ♂. Venter sat dense pilifero-punctulatus, segmento 6° convexo, polito.

Long. 21 millim.

Hab. Costa Rica (*Van Patten*). Two examples only.

A distinct species, intermediate, as regards the fineness of the sculpture, between *L. setifera* and *L. gigantea*.

35. **Lachnosterna trichia.**

Sat anguste oblonga, fusco-rufa, dense erecte flavi-pilosa, fronte, thorace elytrorumque basi longissime pilosis, dense subconfluenter punctulata, parum nitida; clypeo mediocri rotundato, margine antico paullo elevato et valde sinuato, supra discrete punctato; thorace medio mediocriter dilatato, margine crenulato et longe setoso; scutello grosse irregulariter punctato.

♂. Pygidium convexum, breviter subrecumbenti-pilosum et sat dense erecte longipilosum. Venter medio depressus, subsparse punctulatus, segmento 5° medio densius punctulato, 6° medio concavo marginibus vix elevatis. Calcaria postica elongata, libera. Ungues basi paullo dilatati, dente mediano (basi paullulum approximato) sat valido curvato. Antennarum clava elongata, cæteris articulis conjunctis æqualis, 4°–7^{m} intus acuminatis.

♀. Pygidium triangulare, fere planum, breviter pilosum absque pilis longioribus, apice læve politum et ante apicem medio depressum. Ungues fere sicut in ♂, ad basin magis dilatati.

Long. 16–17 millim.

Hab. Guatemala, Las Mercedes (*Champion*).

Three examples only, two males and one female.

Not very closely allied to any other Central-American species, but seems to approach nearest *L. testaceipennis*, in which, however, the median (or lower) tooth of the claws

is a little more approximate to the apical one in both sexes. The tawny-brown colour, dense erect yellowish-tawny pile, and dense, moderately strong punctuation, distinguish the species.

V. *Lower tooth of the claws as in* IV., *but situated below the middle, and inclined towards the large basal dilatation.*

36. **Lachnosterna rugipennis.** (Tab. XI. fig. 12, ♂.)

Lachnosterna rugipennis, Schauf. Stett. ent. Zeit. 1858, p. 318[1].

Hab. Mexico[1], Toxpam, Cordova (*Sallé*), Jalapa, Misantla (*Höge*); Guatemala, Purula (*Champion*); Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui (*Champion*).

A pruinose nearly glabrous species resembling *L. rorulenta*, but distinguished readily by the tarsal claws being greatly dilated from the base to the lower tooth, which is straight and at its base forms part of the dilatation. The male further differs from the same sex of *L. rorulenta* and its allies by the long and freely articulated spurs of the hind tibiæ; and by the abdomen being concave in the middle, with a deeply canaliculated sixth segment, and a closely granulated patch on the hind part of the fifth segment. The pygidium is closely punctured and hairy in both sexes. In some specimens of the female, especially those from Chiriqui, the elytra near the suture are beset with very long erect tawny hairs. Most Mexican examples of the female show no trace of these long hairs, but sometimes a few shorter similar hairs are seen near the base and apex of the elytra. A male from Jalapa is figured.

37. **Lachnosterna lissopyge.**

L. rugipenni proxime affinis, forsan ejus varietas; differt pygidio castaneo polito, brevissime sparse et vix perspicue setoso; supra nigra, pruinosa, elytris discrete punctulatis.

Long. 22–25 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Champion*).

Two males only.

38. **Lachnosterna hemilissa.** (Tab. XI. fig. 13, ♀.)

L. rugipenni affinis, sed facies valde diversa. Elongato-oblonga, nigra, capite thoraceque politis, elytris solum pruinosis, margine piceo-rufo; subtus cum pedibus piceo-rufa; clypeo fere semicirculari, margine antico medio sinuato-reflexo, capite toto grosse punctato; thorace multo densius quam in *L. rugipenni* punctato; elytris subrugulosis et sat dense umbilicato-punctulatis, costis paullo elevatis, punctis prope apicem griseo-setulosis; pygidio erecte longipiloso; tibiis intus et tarsis subtus longe pilosis; pectore flavo-villoso. Ungues basi dilatati, dente inferiore recto postice spectanti, juxta dilatationem sito.

♂. Pygidium valde regulariter convexum. Venter sicut in *L. rugipenni* medio cavatus, sed segmentis medio setosis, 5° concavo, 6° concavo et canaliculato. Calcaria postica elongata, libera. Tarsi subtus densius pilosi. Antennarum clava valde elongata articuloque 7° intus acute producto.

♀. Pygidium triangulare vel conicum, juxta apicem planatum et utrinque bituberculatum, margine apicali verticaliter arcuato. Venter segmento 6° magno, convexo, paucipunctato.

Long. 21–24 millim.

Hab. Panama, Chiriqui (*Trötsch*). Two examples only.

39. **Lachnosterna schizorhina.** (Tab. XI. fig. 14, ♂.)

Latius oblonga, minus convexa, nigra vel castanea, polita, supra nuda, pectore fulvo-villoso; clypeo sat parvo, biarcuato, antice medio profunde inciso, margine reflexo, toto capite discrete punctato; thorace medio subangulatim dilatato, utrinque prope angulum acutum anticum late depresso, supra sat dense rotundato-punctato, linea dorsali lævi; elytris punctatis, costis elevatis.

♂. Pygidium parum convexum, punctatum, nudum. Venter valde convexus, medio vage canaliculatus, parum punctulatus, segmento 5° postice medio declivo et dense granulato, 6° medio transversim concavo. Calcaria postica elongata, libera. Ungues dimidio basali dilatato, dente inferiore recto parvoque juxta dilatationem sito.

Long. 22–24 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Chiriqui (*Trötsch*).

There are three examples only of this fine species, all males. In all three the elytra cover the base of the pygidium, but this may be accidental. A Nicaraguan specimen is figured.

40. **Lachnosterna tenuipilis.**

L. gigantea subsimilis, sed valde differt inter alia unguibus basi late dilatatis. Oblonga, castaneo-rufa, rufo-fusca vel nigra, opaca, subtilissime et densissime punctulata et breviter subrecumbente griseo-pilosa, sericeo-nitens; capite grosse subconfluenter punctato, fronte breviter setosa, clypeo transverso, extus late rotundato, margine antico reflexo et leviter sinuato; elytris costis obtuse elevatis; pectore dense fulvo-hirto.

♂. Pygidium parum convexum, breviter erecte pilosum, ante apicem margineque longe setosis. Venter medio late canaliculatus, dense punctulato-pilosus, segmento 5° simplici, 6° plano grosse punctato. Calcaria postica lata, compressa, libera. Ungues basi late dilatati, dente brevi acuto proximo, versus basin inclinato, dente apicali curvato longe libero. Antennarum clava elongata, articulis 2°–7^{m} conjunctis æqualis.

♀. Pygidium sicut in ♂. Venter convexus, densissime punctulato-pilosus, segmento 6° majore, convexo, grosse punctato. Ungues dente mediano quam in ♂ longiore sed dilatatione basali approximato.

Long. 20–23 millim.

Hab. Mexico, Orizaba, Teapa, Playa Vicente, Juquila (*Sallé*); Guatemala, Aceituno (*Champion*); Nicaragua, Chontales (*Belt*). Eight examples.

In the minute dense punctuation and fine short laid pubescence this *Lachnosterna* is similar to *L. gigantea*, black examples being scarcely distinguishable from small individuals of that species of the same colour. But the male sexual characters are totally different and the claws show a much closer approximation to the basal dilatation of the middle tooth, which in the male is short, inclined towards the base, and separated from the large broad basal tooth only by a narrow cleft.

41. **Lachnosterna scissa.**

Elongato-oblongo-ovata, nigra, elytris partim obscure rufescentibus, glaberrima sed leviter lacteo-opalescens, subtus piceo-rufa; capite lato, oculis maximis, clypeo valde transverso utrinque late rotundato, margine antico paullo reflexo, medio sinuato, dense punctato; fronte sparsissime grosse punctata; labro crasso, sicut in *Schizonychis* nonnullis medio profunde scisso; thorace brevi, medio dilatato, angulis obtusis, margine haud perspicue crenato, dorso discrete punctulato, interstitiis lævibus; scutello parum punctato; elytris minus dense ruguloso-punctulatis. Antennæ 10-articulatæ, clava ♂ ♀ brevi, articulis 6 vel 7 præcedentibus multo latioribus haud productis. Venter ♂ ♀ convexus, glaber, segmento 5° utrinque fulvo-barbato excepto.

♂. Pygidium convexum, passim minus grosse punctatum, nitidum. Venter convexus, suturis haud deletis, sparsim punctulatus; segmento 5° apice depresso, transversim sulculato; 6° transversim concavo, ruguloso, marginibus elevatis. Calcaria postica elongata, libera. Ungues valde curvati, basi dentato-dilatati et juxta dilatationem dente angusto brevi retrorsum inclinato.

♀. Pygidium basi convexum, post medium depressum, punctatum, glabrum. Venter fere sicut in ♂, sed segmento 5° medio apice haud depresso, 6° convexo, grosse punctato.

Long. 18 millim.

Hab. Mexico, Cordova (*Sallé*).

42. **Lachnosterna ——?**

Hab. Mexico, Panistlahuaca (*Sallé*).

A single female example of a species closely resembling *L. scissa*, but differing in the form of the pygidium and claws.

43. **Lachnosterna angulicollis.**

L. cribricolli multo major, quoad thoracem subsimilis sed differt unguibus gracilioribus apice longe liberis denteque parvo infra medium, dente minore basali paullo remoto. Elongato-oblongo-ovata, haud dilatata, testaceo-rufa, nitida, nuda; clypeo utrinque late rotundato, apice medio breviter inciso, capite toto grosse dense scabroso-punctato, fronte barbata; thorace medio subangulatim dilatato, margine crenato antice recte postice rotundatim angustato angulis obtusis, dense discrete mediocriter punctato; elytris ruguloso-punctatis, costis vix perspicuis; pectore dense aureo-fulvo villoso.

♂. Pygidium mediocriter convexum, discrete punctulatum, nudum. Venter convexus, medio lævi, segmento 5° medio planato sat dense punctulato, 6° medio transverse concavo, margine apicali late reflexo et medio inciso, punctulato. Calcaria postica elongata, libera. Ungues basi breviter dilatati, dente inferiore infra medium brevi acuto, dente apicali elongato. Antennarum clava elongata, cæteris articulis conjunctis fere æqualis.

♀. Pygidium basi subconvexum, prope apicem transverse depressum, margine apicali reflexo, punctulatum, nudum. Venter convexus, lævis, sparse punctulatus; segmento 5° margine postico depresso, 6° convexo, punctato.

Long. 18–21 millim.

Hab. Mexico, Jacale, Parada (*Sallé*).

Var. Caput et thorax nigra, antennarum clava brevior.

Hab. Mexico, Jalapa, Las Vigas (*Höge*).

Two examples of the unicolorous typical form and four of the variety.

I adopt the name the species bears in the Sallé collection.

44. **Lachnosterna rugulosa.** (Tab. XI. fig. 15, ♂.)

Ancylonycha rugulosa, Blanch. Cat. Coll. Ent. i. p. 134[1].

Hab. Mexico[1], Tuxtla, Orizaba (*Sallé*), Jalapa (*Höge*); Guatemala, Purula (*Champion*).

A metallic species, varying from brassy-black or brown to dark brassy-green and rich coppery-brown. It is almost glabrous above, having only a scanty clothing of short subrecumbent grey hairs, mostly arranged in rows on the elytra. The sculpture is

coarse; the punctures moderately close, and lying in very irregular rugæ on the thorax, the elytra entirely rugose-punctate; the scutellum is punctured, with a broad smooth space in the middle. The labrum is thick and deeply and sharply cleft as in *L. scissa*. The clypeus is transverse quadrate, with a deep notch in the middle of the front margin, and each side from the notch to the base forming a nearly semicircular curve. Both the fore and hind angles of the thorax are acute. The ventral segments 1–4 have on each lateral suture a pencil of long golden-yellow hairs. The following are the sexual differences:—

♂. Pygidium vix convexum, valde inæquale, grossissime rugoso-punctatum, glabrum, margine apicali breviter setoso. Venter convexus, medio lævissimus, lateribus parce setifero-punctulatis; segmento 5° apice transversim depresso, 6° transversim concavo, lævi. Calcaria postica elongata, libera. Ungues basi obtuse dentati, dente inferiore mediano mediocri acuto, a dente basali paullo distanti. Antennarum clava parva.

♀. Pygidium basi bi- apice uni-tuberosum, medio transverse depressum. Venter convexus, segmento 5° apice simplici, 6° convexo, apice transverse sulcato. Ungues sicut in ♂.

Notwithstanding its very different facies, numerous similarities of structure show that this species is closely allied to *L. scissa*.

A male from Tuxtla is figured.

45. Lachnosterna submetallica.

L. rugulosæ proxime affinis; differt supra densius et subtilius punctata et brevissime squamulosa. Æneo- vel cuprascenti-fusca, femoribus nitidius æneis; supra densissime punctulata, in punctis squamula angusta incumbente griseo-ochracea; clypeo sicut in *L. rugulosa*; thoracis disco anteriore maculis duabus politissimis; scutello dense ruguloso-punctato; ventris segmentis 2°–4^{m} (♂ ♀) medio callis duobus validis. Antennæ in utroque sexu clava parva, articulis 6° et 7° latis, 3°–5^{m} paullulum elongatis.

♂. Pygidium fere planum, scabrosum, grosse incumbente ochraceo-squamosum, medio callo angusto lævi. Venter medio lævis, politus; segmento 5° fere toto ochraceo-squamuloso, apice medio depresso, 6° medio transverse depresso, marginibus parum elevatis. Calcaria postica elongata, libera. Ungues basi lati, dente parvo acuto basali, dente inferiore apud medium sat elongato acuto.

♀. Pygidium sicut in ♂, sed squamis tenuioribus. Venter sicut in ♂, segmentis 5° et 6° convexis exceptis. Ungues dente inferiore longitudine denti apicali æquali.

Long. 16–20 millim.

Hab. Guatemala, Senahu and Panima in Vera Paz (*Champion*).

46. Lachnosterna —— ?

Hab. Mexico, Orizaba (*Sallé*).

A single example of doubtful sex. It appears to represent a distinct species allied to the two preceding.

VI. *Lower tooth of the claws smaller and straight or little inclined, situated near to or below the middle. Base of claw generally without dilatation.*

1. *Antennæ* 10-*jointed.*

47. Lachnosterna euryaspis.

L. scissæ similis, sed valde differt quoad clypeum, ungues etc. Sat anguste oblonga, subnitida, glabra, supra

castaneo-fusca, subtus cum pedibus antennisque rufo-fulva, nitida, ventre obscuriore; clypeo valde transverso, lateribus parallelis antice late rotundatis, margine antico leviter sinuato-reflexo, supra confluenter punctato, fronte sparsius sed haud grossius punctata; thorace ante medium dilatato, lateribus postice longe parallelis, angulis posticis rectis, supra subtiliter disperse punctulato; elytris coriaceis, haud dense punctato-rugosis, costis perspicuis. Labrum normale.

♀. Pygidium dimidio basali convexo, apicali depresso parce punctato, rugulosum. Venter convexus, glaber, impunctatus, segmento 5° lateribus punctulato-pilosis segmentoque 6° convexo punctato exceptis. Ungues basi dentato-dilatati, dente inferiore infra medium (prope dilatationem) brevi, robusto, curvato.

Long. 18 millim.

Hab. Mexico, San Antonio de Arriba (*Sallé*), Las Vigas (*Höge*).

Although I have seen one sex and two examples only of this species, its curious relationship to *L. scissa*, and the facility with which it may be recognized, justify its being described.

48. **Lachnosterna molopia.** (Tab. XI. fig. 16, ♂.)

Elongato-oblongo-ovata, glabra, nitida, castaneo-nigra, subtus cum pedibus antennisque fulvo-castanea, sat disperse punctulata; clypeo minus transverso nec late rotundato, trapezoidali, angulis rotundatis, margine antico leviter sinuato et reflexo, confluenter punctulato, fronte minus dense, discrete punctulata; thorace ante medium dilatato, postice lateribus parallelis subsinuatis, angulis posticis subacutis, supra discrete punctato, interstitiis planis politis foveaque rotunda utrinque versus angulos posticos; scutello punctulato, spatio mediano lævi. Labrum late arcuatim emarginatum. Antennæ utroque sexu clava parva, ♂ paullo longiore, articulis 6° et 7° intus dilatatis. Venter segmentis 2°–5^{m} medio utrinque transverse callosis, callis plus minusve elevatis. Ungues elongati, basi brevissime dentato-dilatati, dente inferiore parvo, acuto, recte exstante, infra vel juxta medium sito.

♂. Pygidium convexum, glabrum, subconfluenter punctatum, fovea rotunda utrinque prope basin, margine apicali breviter fimbriato. Venter medio glaber, lævis, segmento 5° dimidio apicali depresso, 6° transverse convexo, lævi, apice lato transversim sulcato, punctato, margineque apicali medio sinuato. Calcaria postica elongata, libera.

♂ var. Segmentum ventrale 6^{m} transverse depressum, margine postico paullo elevato.

♀. Pygidium juxta basin solum convexum, postice concavo-depressum, apice paullo reflexum, punctato-rugulosum, glabrum, basi sicut in ♂ bifoveatum. Venter sicut in ♂, differt solum segmento 6° magno, gibboso, apice haud sulcato margineque apicali integro, basi lævi, apice grosse punctato.

Long. 17–18 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*, *Höge*).

Very similar in form and colours and in important structural characters to *L. euryaspis*; the curious wheals on the ventral segment indicate an affinity also with *L. submetallica*. The totally different form of clypeus in these three species seems to show that this is a very variable feature. It resembles in form, colour, and other characters the North-American *L. fusca* and its allies; but differs from all the species of the *L. fusca* group by the lower spur (♂) being articulated, not connate. The male variety (which is apparently much less common than what I take to be the typical form) is so different that we seem here to have a case of dimorphism in this sex; but when a large series is examined intermediate states are seen to exist. In one male example the apical ventral segment is nearly as gibbous as in the female, and it is only the transverse depression at its apex and the longer antennal club which enable one to decide that it is a male.

49. Lachnosterna segregans.

L. molopiæ affinissima, differt solum statura minore, clypeo transverso utrinque late rotundato, margine antico sat late reflexo, medio distincte sinuato, et antennis ♂ longissime clavatis.
Long. 14–17 millim.

Hab. Mexico, Ciudad in Durango (*Höge*). Three examples, all males.

Resembles the smaller examples of *L. molopia*, chestnut-coloured and glabrous above, fulvo-testaceous beneath; the elytra more strongly punctate-rugulose. The form of the clypeus is different, being short, rounded on each side, and rather strongly sinuate anteriorly, instead of being rather long and obtusely trapezoidal as in *L. molopia*. The callosities on the middle ventral segments are feeble or obsolete; the sixth segment (male) is formed precisely as in the male variety of *L. molopia*. The pygidium is coarsely rugose-punctate as in *L. molopia*; but the thorax differs in wanting the two large postero-discoidal foveæ. The lower tooth of the tarsal claws is very small, outstanding, and situated about the middle of the claw. The antennal club is greatly elongated, and longer than the rest of the joints taken together.

50. Lachnosterna divertens.

L. molopiæ quam proxime affinis; differt solum statura angustiore (anguste oblonga sive cylindrica), clypeo adhuc magis elongato, semiovato, perparum vel nullomodo sinuato et antennis longissime clavatis.
Long. 17 millim.

Hab. Mexico, Ciudad and Refugio in Durango (*Höge*).

Three examples, males. The chief character which necessitates the separation of this form from *L. molopia* is (as in *L. segregans*) the great length of the antennal club in the male. It differs from both these species in its narrow, cylindrical form, and in the shape of the clypeus—narrowed anteriorly as in *L. molopia*, but having no trace of angles, and gradually rounded to the front and feebly or not at all notched on its anterior edge, which is scarcely reflexed; both clypeus and forehead are more minutely and densely punctured than in *L. molopia*. The ventral callosities are feeble or entirely obsolete. The pygidium offers no difference, and the sixth ventral segment is formed as in the male variety of *L. molopia*. The tooth of the claw is short as in *L. molopia*, but situated a little higher (*i. e.* towards the apex) than the middle of the claw; it varies a little in position, as it does in *L. molopia*.

The antennal club varies in length, but in the examples in which it is shortest it equals in length all the remaining joints together. Judging from this and other evidences of variability or plasticity in this interesting group, I think that we have here a case of an incipient species in process of segregation.

51. Lachnosterna setipennis.

L. molopiæ quoque affinis, sed differt statura angustiore, cylindrica, elytrisque toto griseo-setosis, setis erectis parum densis. Nigra vel castaneo-fusca, minus nitida; clypeo semicirculari margineque leviter reflexo

integro, toto capite æqualiter dense subconfluenter punctulato; thorace sicut in *L. molopia* ante medium dilatato et postice lateribus parallelis, angulis posticis subacutis, marginibus nullomodo crenatis, supra sat dense punctulato, foveis duabus mediocribus; elytris punctulatis et rugosis, costis elevatis. Ungues dente inferiore paullo infra medium, parvo sed curvato.

♂. Pygidium convexum, grosse confluenter punctatum, glabrum. Venter leviter callosus, medio glaber, parum punctulatus; segmento 5° apice medio transversim depresso, 6° transversim depresso rugoso. Calcaria postica elongata, libera. Antennarum clava elongata, articulis 2°–7ᵐ conjunctis paullo longior.

♀. Pygidium convexum, apice leviter depressum, grosse confluenter punctatum, glabrum. Venter medio glaber, sparse punctatus, segmentis 5° apice et 6° (plano) toto densius punctatis.

Long. 18–19 millim.

Hab. Mexico, Ciudad in Durango (*Höge, Forrer*).

Three examples only. Evidently also an incipient species, but somewhat further segregated than *L. segregans* and *L. divertens* from *L. molopia.*

52. **Lachnosterna** —— ?

Hab. Mexico, near the city (*Flohr*).

A single example (female) of a small species distinct from all the foregoing.

53. **Lachnosterna** —— ?

Hab. Mexico, Oaxaca (*Höge*).

A single female example, similar to, but specifically distinct from, the preceding.

54. **Lachnosterna** —— ?

Hab. Mexico, near the city (*Flohr*).

Also a single female only, whose affinities are not determinable.

55. **Lachnosterna** —— ?

Hab. Mexico, Matamoros Izucar, Puebla (*Höge*).

A single female example, apparently of a distinct species, allied to *L. molopia.*

56. **Lachnosterna nigerrima.** (Tab. XI. fig. 17, ♂.)

Breviter ovata, omnino nigerrima, glabra, nitida, pectore fulvo-villoso; capite lato, toto dense subconfluenter punctato, clypeo subsemicirculari, antice late obtuso et sinuato, paullo reflexo; thorace medio sat late rotundato-dilatato, angulis anticis obtusis, posticis rectis, margine crenato, supra discrete punctulato, plaga oblonga dorsali lævi; elytris (præcipue ♀) paullo ampliatis, coriaceis, discrete punctulatis. Venter breviter sparsissime griseo-setosus.

♂. Pygidium paullo convexum, disperse punctulatum, glabrum. Venter medio late depressus; segmento 5° medio postice depresso et aspere punctulato, 6° basi convexo, lævi, apice depresso punctato. Calcaria postica libera. Ungues dente parvo, acuto, haud procul a basi sito. Antennarum clava parum elongata, articulis 2°–7ᵐ conjunctis vix æqualis.

♂ var. Segmentum ventrale 6ᵐ transverse depressum.

♀. Pygidium planum, sparsim punctulatum. Venter convexus, segmentis 5° et 6° (plano vel paullo convexo) paullo densius punctulatis. Ungues sicut in ♂.
Long. 13–20 millim.

Hab. Mexico, La Piedad in Michoacan (*Sallé*), Tupataro in Guanajuato (*Höge*).

Named "*Eugastra*, sp.," in the Sallé collection. It approaches *Eugastra* and the section to which *L. farcta* belongs (Group II. of Leconte) in the metasternum being somewhat abbreviated, but differs in being winged in both sexes. It is a *Lachnosterna* allied to *L. molopia*, with which it has in common the two forms of male. The ligular part of the mentum has a deep notch, and the mandibles and maxillæ are very robust. In all the numerous examples the colour of the body, antennæ, palpi, and legs is deep black.

An example from Tupataro is figured.

57. **Lachnosterna integra.**

Melolontha integra, Say, Bost. Journ. Nat. Hist. i. p. 180 (1835)[1]; Complete Writings, ii. p. 654 (nec Leconte).
? *Ancylonycha stipitalis*, Blanch. Cat. Coll. Ent. i. p. 136[2].

Hab. Mexico[1 2], near the city (*Flohr*), Jalapa (*Höge*).

Distinguished from numerous allied species, having a similar entire semicircular clypeus &c., by its clearer reddish-tawny colour, with very rarely a trace of pruinosity and that on the elytra only; by the extremely short antennal joints 3–7, with greatly elongated club in the male (the club being longer than all the rest of the antennæ); and by the concave sixth ventral segment in the male having a narrow anterior rim. The forehead, thorax, and base of the elytra are clothed with very long hairs, and the elytra have, besides, a short incumbent grey bristle in each puncture. The fifth ventral segment in the male has a median, densely granulated, and brown oval patch. The general form is rather short oblong-ovate. This species varies in size from 14 to 17 millim.

58. **Lachnosterna anodentata.**

L. integræ (Say) proxime affinis. Colore et pubescentia haud diversa. Antennarum clava ♂ autem valde elongata, cæteris articulis conjunctis longior. Differt unguibus basi haud dentatis, parum obtuse dilatatis, thorace antice longe sinuatim angustato, angulis anticis acutis, et segmento 6° ventrali margine anteriore medio dentato-producto.
Long. 14–17 millim.

Hab. Mexico, Etla, Parada, Peras (*Sallé*), Mexico city, Jalapa (*Höge*).

The colour is reddish-tawny, as in *L. integra*, with only a slight trace of pruinosity, in some examples, on the elytra. The semicircular concave clypeus and pubescence also offer no difference; but the general form is rather more oblong and narrower. The antennæ of the males have a similarly long pale club, but the joints 3–7 are scarcely so short as in *L. integra*. Two female examples, labelled *L. stipitalis*,

Blanch., from Toluca, in the Sallé collection, may possibly belong to this species, but they differ considerably.

59. **Lachnosterna rubella.**

L. integræ (Say) valde affinis et forsan ejus varietas geographica; differt multo minore, supra densius punctulata, præcipue elytris densissime ruguloso-punctatis. Breviter ovata, fulvo-rufa (raro castanea), breviter setosa, fronte, thorace, elytrorum basi et pygidio longissime hirtis; capite haud semicirculari, magis transverso, utrinque latius rotundato, supra concavo, margine reflexo integro. Ungues dente parvo acuto post medium, basi haud dilatati.

♂. Venter sicut in *L. anodentata*, segmento 6° margine antico medio dilatato bidentato, dentibus plerumque vix elevatis vel sub margine segmenti 5ⁱ occultis. Antennarum clava cæteris articulis conjunctis multo longior.

Long. 11–15 millim.

Hab. Mexico, Toluca, Amecameca in Morelos, Pachuca in Hidalgo (*Höge*).

Among the very numerous examples examined of this insect there are a few males in which the sixth ventral segment scarcely differs from that of *L. integra*; in all, however, of both sexes, the shape of the clypeus is different, and this (in addition to the smaller size and much closer rugulose punctuation of the elytra, on which there is no trace of pruinosity) renders it necessary to distinguish the form by a separate name and description. The four examples of *L. anodentata* are larger and more elongate-oblong in form.

60. **Lachnosterna misteca.** (Tab. XI. fig. 18, ♂ var.)

L. integræ (Say) valde affinis, differt præcipue antennarum clava in ♂ multo minore cæteris articulis conjunctis breviore; capite majore (clypeo semicirculari margine integro), colore supra obscuriore subcastaneo, pruinoso, punctis thoracis sparsioribus.

♂ ♀. Pygidium parum convexum, punctulato-setiferum, ante apicem et ad marginem apicalem setis nonnullis multo longioribus.

Long. 15–20 millim.

Hab. Mexico, Etla, Juquila, Oaxaca (*Sallé*), Jalapa, Las Vigas, Mexico city (*Höge*).

Var. ♂. Venter sicut in *L. integra* ♂, medio convexus, lævis, plus minusve canaliculatus, segmento 5° medio plaga obscuriore dense granulata, apice depresso, 6° margine anteriore depresso nec producto.

Hab. Mexico, Puebla (*Sallé*), Las Vigas (*Höge*).

I adopt the name *L. misteca*, Chevr. (MS.), given to the species in the Sallé collection. An example from Puebla of the male variety is figured.

61. **Lachnosterna longipilosa.**

L. integræ et *L. mistecæ* affinis, sed *Phytalo pruinoso* similior; differt ♂ ventris segmento 5° margine anteriore elevato, dilatato, medio inciso etc. Nigra, piceo-nigra vel fusco-castanea, pruinosa, elytris setis griseis brevissimis, fronte, thorace antice elytrisque basi et juxta suturam longissime pilosis; clypeo sicut in *L. integra*, sed margine antico minus elevato et distincte sinuato, fronte grosse scabrosa; thorace medio sat angulatim dilatato, antice recte angustato, angulis anticis acutis, margine grosse crenato, disperse punctato, punctis breviter griseo-setiferis, punctis majoribus pilis valde elongatis emittentibus; pectore fulvo-cinereo villoso; abdomine lateribus sericeo-pruinosis, antennis pedibusque testaceo-rufis. Ungues versus basin breviter (♀ longius robustiusque) recte acute dentati, basi parum dilatati.

♂. Pygidium versus apicem altius convexum, punctulato-setulosum, prope apicem et ad marginem apicalem setis multo longioribus obsitum. Venter medio lævis, politus, canaliculatus; segmento 5° medio area depressa, opaca, dense granulata; 6° transversim concavo, margine anteriore elevato-dilatato, medio inciso. Calcaria postica elongata, libera. Antennarum clava brevis, articulis 2°–6^{m} conjunctis haud longior.

♀. Pygidium triangulare, setis et punctis sicut in ♂. Venter convexus, medio politus, sparsim setifero-punctatus; segmento 5° præcedente dimidio longiore.

Long. 17–19 millim.

Hab. Mexico, Tepansacualco, Peras, Guanajuato (*Sallé*), Mexico city (*Flohr*), Jalapa, (*Höge*).

Named *L. longipilosa*, Reiche (MS.), in the Sallé collection. The species resembles *Phytalus pruinosus* and *L. rorulentus*, but the form of the claws and the spurs of the posterior tibiæ are quite different.

62. **Lachnosterna brevidens.**

L. integræ (Say) affinis, sed differt unguibus dente inferiore parvo prope basin sito. Anguste oblonga, gracillima, fulvo-testacea, subnitida, brevissime griseo-setosa, fronte, thorace antice elytrisque basi pilis longioribus erectis obsitis; clypeo semicirculari valde concavo, sparsim punctato, fronte grosse scabrosa; thorace medio parum dilatato, margine subcrenulato, æqualiter punctulato; elytris discrete punctulatis.

♂. Pygidium mediocriter convexum, nitidum, punctatum, parce breviter setosum. Venter medio parum depressus, sat dense aspere punctulatus et setosus, suturis deletis; segmento 5° toto medio densissime granulato et fusco, 6° vix concavo medio granulato et setoso. Calcaria postica elongata, libera. Ungues graciles, prope basin denticulo parvo, basi ipso leviter dilatato. Antennarum clava valde elongata, articulis 1°–7^{m} conjunctis longior, articulis 4°–7^{m} intus acute productis.

Long. 14–15 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*). Two examples, males.

Bears in the Sallé collection the name *L. obesa*, Sturm (MS.), which I cannot adopt, as it has been used for a described species by Dr. Leconte.

63. **Lachnosterna ——?**

Hab. Mexico, Zimapan in Hidalgo (*Höge*).

A single example, sex uncertain, of a very small and distinct species of the *L. incerta* group.

64. **Lachnosterna ——?**

Hab. Mexico, Guajuco in Nuevo Leon (*Dr. Palmer*).

A single example of a species allied to the preceding.

65. **Lachnosterna glabricula.**

Lachnosterna glabricula, Lec. Journ. Ac. Phil. ser. 2, iii. p. 260[1].

Hab. North America, Kansas[1], Texas.—Mexico, Santa Clara in Chihuahua (*Höge*).

One example (female) agreeing well with Leconte's description and with examples from Texas, with which I have compared it. It is distinguishable from similar unicolorous testaceous species from Mexico by the submarginal costa of the elytra.

66. **Lachnosterna microdon.**

Oblonga, versus apicem dilatata, piceo-nigra; corpore subtus, femoribus et antennis piceo- vel testaceo-rufis; fronte thoraceque longe hirsutis, elytris brevissime griseo-setosis; clypeo transverso, quadrato, angulis rotundatis, margine antico alte reflexo, medio leviter sinuato, toto capite dense punctato; thorace post medium mediocriter dilatato, supra et elytris discrete punctulatis. Antennæ 10-articulatæ, articulis 3°–5^{m} subovalibus, 6° et 7° haud subito breviores.

♂. Pygidium mediocriter convexum, sparsim setifero-punctatum. Venter medio depresso-canaliculatus, parce setulosus, politus, segmento 6° brevi medio transversim planato sublævi. Calcaria postica gracilia, libera. Ungues basi gradatim latiores prope basin brevissime dentati. Antennarum clava articulis 2°–7^{m} conjunctis æqualis.

♀. Pygidium planissimum, sparsim setifero-punctatum. Ungues basi gradatim latiores, dente longe ante basin quam in ♂ paullo majore, hamato.

Long. 14 millim.

Hab. Mexico, Peras (*Sallé*). Two examples only.

2. *Antennæ 9-jointed.*

67. **Lachnosterna porodera.**

Oblongo-ovata, testaceo- vel castaneo-rufa, fronte thoraceque antice erecte hirsutis, elytris leviter pruinosis; clypeo sat parvo, rotundato, margine elevato, medio breviter sinuato, dense punctato, fronte brevi convexa, grosse scabrosa, postice transversim obtuse carinato, occipite nitido punctulato; thorace sat angusto, ante medium valde dilatato margine crenato, angulis anticis productis, acutis, posticis subrectis, antice anguste marginato, disco anteriore grosse rotundato-punctato, postice et lateribus sparse rotundato-punctulato spatiis lævibus; scutello subtiliter sparse annulato-punctulato; elytris punctulatis; pectore cinereo-fulvo villoso. Antennæ 10-articulatæ, articulis 2°–6^{m} conjunctis quam scapus vix longioribus.

♂. Pygidium parum convexum, annulato-punctatum, erecte hirsutum, margine apicali reflexo, longe setoso. Venter medio concavus et canaliculatus sublævis, segmento 5° medio basi plaga asperato-punctulata et setosa, 6° transversim concavo, longius setoso. Calcaria postica libera. Ungues versus basin gradatim paullo latiores, dente recto sat valido prope medium. Antennarum clava articulis 2°–6^{m} conjunctis æqualis.

♀. Pygidium sicut in ♂. Venter segmentis 5° (basi excepta) et 6° sat dense setifero-punctatis.

Long. 15–18 millim.

Hab. Mexico, Guanajuato, Peras (*Sallé*).

Five examples.

68. **Lachnosterna multipora.** (Tab. XI. fig. 19, ♂.)

L. porodera proxime affinis; differt thorace medio pruinoso, usque ad basin poroso et longe hirsuto, elytris dense punctulatis pygidioque densius annulato-punctulato.

♂. Venter segmentis 2°–4^{m} medio dense, 5° densissime fulvo-hirsutis, 6° transversim concavo. Ungues et antennæ sicut in *L. porodera*.

♀. Ventris segmento 5° creberrime subconfluenter punctato, dense hirsuto.

Long. 14–16 millim.

Hab. Guatemala, Capetillo (*Champion*).

Eight examples.

69. **Lachnosterna ——?**

Hab. Mexico, Jalapa (*coll. Bates*).

A single example of a much smaller species, allied to *L. porodera*.

3. *Antennæ 8-jointed.*

(? Gen. *Anonetus,* Erichson, Ins. Deutschl. iii. p. 658.)

70. **Lachnosterna mexicana?** (Tab. XI. fig. 20, ♂.)

Ancylonycha mexicana, Blanch. Cat. Coll. Ent. i. p. 138[1]?

Hab. Mexico, Vera Cruz[1], Jalapa, Oaxaca (*Höge*).

Five examples from Herr Höge's collection agree fairly well with Blanchard's description, with the exception of the number of antennal joints. Blanchard placed his species in the 9-jointed division of the genus, but possibly in mistake (other inaccuracies of the same character by this author having been since corrected by Lacordaire). We cannot, however, be certain of this, and the identification of this interesting little species must remain in doubt. I will add to Blanchard's description that the tarsal claws are slender, slightly and gradually broadened to the base, without basal dilatation, and furnished with a short, sharpened tooth near or a little below the middle. This character seems to forbid the association of *L. mexicana* with Erichson's genus *Anonetus* (a genus without described species), in which the claws, as I have already stated under *Phytalus poculifer*, have a quadrate tooth or dilatation at the base. The mandibles are invisible in repose in some examples, but quite visible along their external edge, and at the tips, in others. The species has a structural peculiarity in the width of the hind coxæ, especially at their junction, where they cover the usually visible first ventral segment, and in some examples also the second.

All the examples appear to be of one sex, apparently male, the sixth ventral segment being plane or slightly concave, and with the fifth punctulate and clothed with stiff hairs.

The following species are represented by single specimens only, in some cases imperfect, and cannot with any advantage be named or located in the above classification of the genus.

71. **Lachnosterna ——?**

Hab. Mexico, Parada (*Sallé*).

72. **Lachnosterna ——?**

Hab. Mexico, Peras (*Sallé*).

73. **Lachnosterna ——?**

Hab. British Honduras, R. Sarstoon (*Blancaneaux*).

74. **Lachnosterna ——?**

Hab. Mexico, Toluca (*Höge*).

75. **Lachnosterna** —— ?

Hab. Mexico, Zimapan (*Höge*).

76. **Lachnosterna** —— ?

Hab. Mexico, Lagos in Aguas Calientes (*Höge*).

77. **Lachnosterna** —— ?

Hab. Mexico, Las Vigas (*Höge*).

78. **Lachnosterna** —— ?

Hab. Guatemala, Cubulco in Vera Paz (*Champion*).

79. **Lachnosterna** —— ?

Hab. Panama, Chiriqui (*Ribbe*).

80. **Lachnosterna** —— ?

Hab. Guatemala, Calderas (*Champion*).

81. **Lachnosterna** —— ?

Hab. Mexico, Jalapa (*coll. Bates*).

82. **Lachnosterna** —— ?

Hab. Mexico (*coll. Bates*).

83. **Lachnosterna** —— ?

Hab. Mexico (*coll. Bates*).

84. **Lachnosterna** —— ?

Hab. Mexico, Guerrero (*Harford, in coll. Bates*).

85. **Lachnosterna** —— ?

Hab. Guatemala (*coll. Bates*).

The following species I have not succeeded in determining from the descriptions:—

86. **Lachnosterna laticeps.**

Ancylonycha laticeps, Blanch. Cat. Coll. Ent. i. p. 136[1].

Hab. Mexico[1].

87. **Lachnosterna cylindrica.**

Trichestes cylindrica, Burm. Handb. der Ent. iv. 2, p. 361[1].

Hab. Mexico or West Indies[1].

EUGASTRA.

Eugastra, Leconte, Journ. Acad. Nat. Sc. Phil. ser. 2, iii. p. 233 (1856).

Leconte founded this genus chiefly on the deep emargination of the ligula, a character which Dr. Horn has since proved, by the dissection of many species of *Lachnosterna*, to have no generic value. But Leconte added the characters:—both sexes apterous, the body above and beneath glabrous. These features, combined with the extremely short metasternum and the subterranean or epigeous habits of the species, seem to mark out a definite modification of the *Lachnosterna* type worthy of generic distinction.

The genus *Tostegoptera*, Blanchard, founded on *L. lanceolata*, Say, is allied to *Eugastra*, but differs in the female only being apterous and having a short metasternum destitute of villosity, the male being in these respects a typical *Lachnosterna*. It forms a transition to the *Lachnosternæ* through *L. nigerrima* (Bates), in which the male has a villose metasternum of the normal length, and the female a shortened and scantily pilose metasternum, but in which both sexes are winged. *Tostegoptera* is not admitted as distinct from *Lachnosterna* by Leconte; in which view he appears to me to have more justification than he has in including *L. æqualis* and *L. farcta* in the latter genus—they are both much more nearly related to *Eugastra*; *L. farcta* (the only one I have been able to examine) at least having a very short and glabrous metasternum, though winged in both sexes.

Leconte admits two Texan species only as belonging to the genus, which cannot satisfactorily be distinguished from the Old-World *Geotrogus*.

1. **Eugastra cribrosa.** (Tab. XI. fig. 21.)

Tostegoptera cribrosa, Lec. Proc. Ac. Phil. vi. p. 231[1].

Eugastra cribrosa, Lec. Journ. Ac. Phil. ser. 2, iii. p. 234[2].

Hab. North America, Texas[1 2].—Mexico, Monterey in Nuevo Leon (*Höge*). One example.

Subfam. *MELOLONTHINÆ*.

POLYPHYLLA.

Polyphylla, Harris, Ins. of Massachusetts, p. 30 (1842); Lacordaire, Gen. Col. iii. p. 294 (1856); Leconte, Journ. Acad. Nat. Sc. Phil. ser. 2, iii. p. 228 (1856); Horn, Trans. Am. Ent. Soc. ix. p. 73 (1881); Kraatz, Deutsch. ent. Zeit. xxvi. p. 134.

Eighteen species of this fine and well-known genus have been described. It is

peculiar to the warmer temperate regions of the northern hemisphere, in the New World reaching as far south as Guatemala, and in Asia, North-western India.

Four species inhabit our region, and another (*P. cavifrons*, Lec.) is recorded from the vicinity of our northern boundary in Arizona.

1. **Polyphylla decem-lineata.** (Tab. XI. fig. 22, ♂.)

Melolontha decemlineata, Say, Journ. Ac. Phil. iii. p. 246 (1824)[1]; Complete Writings, ii. p. 145; Lec. Journ. Ac. Phil. ser. 2, iii. p. 229; Horn, Trans. Am. Ent. Soc. ix. p. 74[2].

Hab. North America, Missouri[1], westward from Colorado to California[2].—Mexico, Guanajuato (*Sallé*), Mexico city, Durango city (*Höge*), San Luis Potosi (*Dr. Palmer*).

Mexican examples do not differ from the Californian form, except in their generally larger size. A male example from Guanajuato is figured.

2. **Polyphylla petiti.** (Tab. XI. fig. 23, ♂.)

Melolontha petitii, Guér. Icon. Règne Anim., Ins. texte, p. 97 (1830)[1].

Polyphylla leucogramma, Blanch. Cat. Coll. Ent. i. p. 161 (1850)[2]; Burm. Handb. der Ent. iv. 2, p. 406.

Hab. Mexico[1 2], Orizaba (*Sallé*), Jalapa, Guadalajara, Mexico city, Durango city (*Höge*); Guatemala, Purula (*Champion*).

We figure a male specimen from Guadalajara.

3. **Polyphylla hammondi.** (Tab. XI. fig. 24, ♂.)

Polyphylla hammondi, Leconte, Journ. Ac. Phil. ser. 2, iii. p. 228; Horn, Trans. Am. Ent. Soc. ix. p. 73[1].

Polyphylla subvittata, Lec. l. c.; Horn, l. c. (*hammondi*, var.).

Hab. North America, Kansas and Northern Texas[1].—Mexico, Villa Lerdo in Durango (*Höge*).

Distinguished readily by the tridentate anterior tibiæ of the male.

A male individual from Villa Lerdo is figured.

4. **Polyphylla conspersa.**

Polyphylla conspersa, Burm. Handb. der Ent. iv. 2, p. 407[1].

Hab. Mexico[1].

A small and, judging from the description, very distinct species, which I have not seen.

Fam. RUTELIDÆ.

Subfam. *ANOMALINÆ.*

The chief distinguishing character of this subfamily lies in the deflected labrum, the anterior middle part of which curves downwards so that the front edge is turned underneath towards the roof of the mouth. Hence, without dissection, the basal part of the organ, more or less sinuated in front, is alone visible. It is incorrect to term this peculiar conformation "labrum emarginatum" as Erichson and after him all the chief writers on the Lamellicornia have done, the middle of the true front edge of the labrum being obtusely rounded and sometimes even produced, not emarginated. This difference is important inasmuch as it lessens the divergence between the subfamilies Anomalinæ and the Geniatinæ, with their allies the Anoplognathinæ and the neighbouring groups, two great series of forms which have hitherto been widely separated in the current classifications.

PHYLLOPERTHA.

Phyllopertha, Stephens, Ill. Brit. Ent., Mandib. iii. p. 223 (1830); Erichson, Naturgesch. d. Ins. Deutschl. iii. i. p. 627; Lacordaire, Gen. Col. iii. p. 327; Burmeister, Handb. der Ent. iv. 2, p. 512 (*Anomala* pars, olim, Handb. iv. 1, p. 239).

Anisoplia (Latreille, Castelnau), Fairmaire, Ann. Soc. Ent. Fr. 1870, p. 378.

Although this genus is generally adopted it has never been satisfactorily defined as distinct from *Anomala*, and many species have, in consequence, been referred to it which have little in common with the typical *P. horticola*. The two Mexican species included in *Phyllopertha* by Blanchard appear to me decidedly not to belong to it, one being an *Anomala*, and the other an *Epectinaspis*. The following species is a *Phyllopertha* in its general form and the slenderness of its hind legs in all their parts, and in the loose villosity of the under surface of the body; but it differs greatly from *Phyllopertha* in the mouth-structure, the mandibles being reduced to very narrow flat tapering blades, lying closely to the roof of the mouth, and the maxillæ having two teeth only. Abrupt degradations of mouth-structure occur, as I shall have to show, also in a group of *Anomalæ* widely different from *Phyllopertha*, and they cannot well be treated as generic.

1. **Phyllopertha tolucana.** (Tab. XII. fig. 1, ♂.)

Brevius ovata, capite thoraceque nitide æneis vel cupreis, griseo-hirsutis, elytris pallide fulvo-testaceis, striis et interstitiis alternis (plus minusve) fuscis; subtus cum pedibus ænescenti-nigra, griseo-villosa; clypeo parvo, subsemicirculari (juxta basin dilatato), concavo, grosse punctato; fronte et vertice umbilicato-punctatis punctisque minoribus intermixtis; antennis et palpis nigris; thorace elytris multo angustiore, paullo ante medium angulato-dilatato, angulis anticis et posticis subrectis, passim æqualiter sat distanter umbilicato-punctulato, margine basali integro; scutello late scutiformi, æneo polito, parce punctato; elytris punctato-striatis, interstitiis 3°, 5° et 7° convexis, lævibus, cæteris punctato-rugosis. Pygidium æneum vel nigro-æneum, politissimum, parce punctatum, longe hirsutum. Mesosternum tuberculiforme. Mandibula tenuiter laminiformia, acuminata, inermia; maxillæ apice bidentatæ.

♂. Antennarum clava valde elongata, articulis 5° et 6° intus acute et longe productis. Tarsi anteriores ungue majore deflecto, medio angulatim dilatato, supra tenuissime dentato.

Long. 8 millim. ♂ ♀.

Hab. Mexico, Toluca (*Höge*).

A large series of examples, nearly all males. The labrum in this species is small and depressed in the middle, with the front margin strongly deflected and in the middle slightly produced. The mentum is very much less flattened in the middle than is usual in the subfamily.

ANOMALA.

Anomala, Samouelle, Entom. Compendium, i. p. 191 (1819); Erichson, Naturgesch. der Ins. Deutsch. iii. p. 616 (1848); Burmeister, Handb. der Ent. iv. 1, p. 230 (1844).

Upwards of 300 species of this well-known genus have been described. It is abundantly represented in the tropical and north temperate zones of both continents, but does not appear to extend to the south temperate zone or to Australia and the Oceanic Islands.

I. *Tarsi quatuor anteriores unguibus fissis, dente superiore in ♂ haud multo breviore.*

1. *Mesosternum angustum nec apice prominens.*

1. **Anomala undulata.**

Anomala undulata, Melsheimer, Proc. Ac. Phil. ii. p. 140 (1844) [1]; Horn, Proc. Am. Ent. Soc. 1884, p. 160 [2].

Euchlora maculata, Castelnau, Hist. Nat. Col. ii. p. 136 (1840) [3] (nom. præocc.).

Melolontha varians (Fabr. partim), Burm. Handb. d. Ent. iv. 1, p. 248 [4] (nom. præocc.).

Hab. North America [1 2 3].—Mexico [4], Orizaba, Toxpam, Cordova, Tepansacualco, Cinco Señores (*Sallé*), Jalapa (*Höge*); British Honduras, R. Hondo (*Blancaneaux*); Guatemala, San Juan in Vera Paz (*Champion*).

A numerous series, similar in the wide range of variation in the number of the dark elytral spots (in the darkest specimens forming undulating belts) to the North-American form. The clypeus is semicircular (widening behind); and the anterior claw-joint is without conspicuous tooth beneath, with the upper part of the cleft apex as long as the lower. The brassy-brown central area of the thorax generally reaches the base, where it is indented by a broad bilobed spot of the testaceous ground-colour.

2. **Anomala discoidalis.** (Tab. XII. fig. 2.)

A. undulatæ quam proxime affinis, sed differt thoracis macula nigro-ænea trapezoidali distincte delimitata, limbis testaceis laterali et basali latis; elytris fulvo-testaceis, macula parva medio juxta suturam nigra, raro disco et callis humeralibus apicalibusque maculatis; thorace paullo subtilius disperse punctato, margine basali medio late interrupto.

Long. 8 millim. ♂ ♀.

Hab. Mexico, Cordova, Teapa (*Sallé*); Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A dozen examples showing very little variation. The clypeus and anterior claws in both sexes are formed precisely the same as in *A. undulata*, and I treat *A. discoidalis* as a distinct species simply on account of its constancy in the Panama region, whence nearly all the specimens come. The few Mexican individuals are rather less typical, the thorax in these having a more or less stronger punctuation, an entire basal margin, and less sharply defined spot, characters which connect them so far with *A. undulata*.

I received a specimen some years ago from Paris under the name of *A. maculicollis*, Dej. An example from Chiriqui is figured.

3. **Anomala guatemalena.** (Tab. XII. fig. 3, var.)

A. undulatæ affinissima, sed differt clypei lateribus fere parallelis etc. Minor, suboblonge ovata, fulvo-testacea, nitida, viridi vel æneo-fusco multifariam variegata; clypeo transverso, lateribus fere parallelis, cum fronte creberrime punctulatis; thorace sicut in *A. undulata*, sat fortiter disperse punctato, æqualiter convexo, linea dorsali obsoleta, margine basali integro; elytris punctato-striatis, interstitiis subtiliter disperse punctulatis (nec transversim rugosis), interstitio lato subsuturali basi solum confuse (fere biseriatim) punctato, post medium unipunctato-striato. Pygidium sicut in *A. undulata* et *A. discoidali* confluenter rugulosum, interspatiis sat amplis subverrucosis.

Long. 6–7 millim.

Color supra variat:—

1. Tota rufo-testacea (elytris fulvioribus).
2. Thorax viridi-æneus, limbo laterali elytrisque fulvo-testaceis.
3. Thorax maculis 2 irregularibus viridi-æneis, elytris fulvo-testaceis callo humerali fusco.
4. Thorax æneus margine elytrisque fulvo-testaceis, his macula mediana transversa suturali alterisque minutis discoidalibus et marginalibus fuscis.
5. Thorax æneus vel rufescens, variabilis, elytris fascia mediana maculari, callo et vitta subhumerali nigro-fuscis.
6. Eadem, sed elytris fasciis latis duabus undulatis æneo-nigris.
7. Eadem, sed capite thoraceque rufis.
8. Caput et thorax viridi-ænea, elytris castaneo-fuscis maculis indistinctis castaneo-rufis.
9. Nigra, capite thoraceque castaneis vel viridi-æneis.

Hab. Guatemala, near the city (*Salvin*), Cerro Zunil 4000 to 5000 feet, Tocoy, El Jicaro, San Gerónimo, Chacoj, San Juan in Vera Paz (*Champion*); Costa Rica, Cache (*Rogers*).

Nearly forty examples, two or three of which show a gradation towards *A. undulata* in the more semicircular clypeus and one or other points of difference. The form, however, is evidently in a state of almost complete segregation from the northern species and merits a separate name and description. A specimen from Chacoj in the Polochic valley is figured.

4. **Anomala chiriquina.**

Brevius ovata (♂ ♀), fulvo-testacea, nitida, capite cuprascenti-rufo, thorace plaga magna nigro-ænea plerumque lineola postero-dorsali abbreviata fulva; elytris sutura fascia angusta undulata mediana, plaga suturali ante apicem (interdum usque ad latera extensa), vitta lata marginali versus humeros et interdum maculis

basalibus nigro-fuscis; capite creberrime punctato, clypei lateribus fere parallelis; thorace æqualiter convexo sat grosse disperse et irregulariter punctato, margine basali integro; elytris irregulariter punctato-striatis (striis parum impressis), interstitiis lævibus, interstitio lato prope suturam parce confuse punctato. Pygidium ♂ ♀ subtiliter confuse rugulosum, subopacum.
Long. 7–7½ millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Var. Rufo-testacea, capite thoraceque æneo-tinctis, hoc subtiliter sparsim punctulato.

Hab. Costa Rica (*Van Patten*).

Five examples. In form *A. chiriquina* comes very close to var. 6 of *A. guatemalena*, differing only in its much smoother elytra and more minutely rugulose pygidium. It is intermediate between that species and the following. The broad subsutural interstice has but few punctures, these forming only two irregular rows.

5. **Anomala eulissa.** (Tab. XII. fig. 4.)

Brevius ovata, fulvo-testacea, polita, capite et thorace fundo nigris vel rufis viridi-æneo metallicis (hoc rarissime lateribus fulvis), elytrisque sutura, fascia angusta mediana, plaga suturali subapicali et vitta irregulari marginali, nigris vel castaneis; capite antice subtiliter crebre punctulato, clypeo postico dilatato; thorace subtilissime et sparsissime punctulato; elytris punctato-striatis, stria 2ª integra, interstitiis lævibus. Pygidium sat acute et grosse confluenter strigulosum, utrinque ♀ retuso-compressum, ♂ fortius retuso-compressum medioque basi sulcatum. Subtus cum pedibus fulvo-testacea aut piceo-rufa aut nigra.
Long. 7 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

The entire second elytral stria distinguishes, besides other characters, this species from others of the *A. undulata* group. Yet, widely distinct though it be, it is linked with *A. undulata* step by step by the species or subspecies above described, and the individual varieties, apparently very rare, intermediate between them. The markings of the elytra in the thirty specimens examined offer little variation; in what may be considered typical examples there are, besides the narrow median fascia and the large rhomboidal subapical sutural spot, an oblong dark spot in the middle of the base and another similar one towards the apex in the fulvous area between the rhomboidal spot and the broad lateral border. These accessory spots are often absent, or the dark fasciæ more or less diffused.

6. **Anomala compressicollis.** (Tab. XII. fig. 5.)

A. undulatæ affinis; magis ovata, flavo-testacea, thorace plaga antero-discoidali viridi vel cupreo-ænea, elytrisque macula rotunda prope suturam mediana (interdum maculis utrinque 3 in fasciam dispositis plagaque suturali posteriore et callo humerali) fuscis; clypeo brevi et lato, postice paullo dilatato, dense ruguloso-punctato; thorace utrinque disco valde retuso velut compresso sulcoque lato dorsali, margine basali integro, disco sat grosse et minus disperse punctato; elytris regulariter punctato-striatis, interstitiis brevibus, interstitio lato prope suturam confuse (fere biseriatim) punctato prope apicem unistriato. Pygidium subtiliter confuse rugulosum, opacum.
Variat fulva immaculata.
Long. 7–7½ millim.

Hab. Guatemala, Zapote (*Champion*).

About a score examples, all presenting the strange apparent deformity of the thorax above described. The species is otherwise closely allied to *A. guatemalena*; but presents little variation in the elytral markings, which consist always (except when absent altogether) of a few small dark spots in the same situations as the leading spots in the other species of the group. The pygidium has an even surface, without foveæ or compression, and is minutely confluent, strigulose, and opaque.

7. **Anomala calligrapha.** (Tab. XII. fig. 6.)

Oblonga, thorace relative parvo et basi elytris angustiore; subtus nigra vel picea ventreque pallido; supra capite thoraceque nigro-æneis, politis, elytris fulvo-testaceis, plaga subhumerali fasciisque duabus undulatis (jam interruptis jam valde dilatatis vel diffusis) nigro-fuscis; clypeo transverso, postice dilatato, punctulato-ruguloso; thorace medio angulatim dilatato deinde usque ad basin lateribus parallelis, dorso undique paullo inæquali, disperse punctato, margine basali integro; elytris oblongis rugulosis, punctato-striatis, interstitio lato subsuturali valde confuse punctato striisque 2ª et 3ª irregularibus. Pygidium nitidum, grossissime haud profunde punctatum, punctis longitudinaliter confluentibus. ♂. Tarsi antici ungue majore basi dilatato, dente tenui superiore elongato.

Long. 7–9 millim. ♂ ♀.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Upwards of twenty examples.

8. **Anomala retusicollis.**

A. calligraphæ et *A. compressicolli* affinis; oblonga, thorace postice lateribus parallelis, elytris haud relative elongatis; capite thoraceque medio nigro-æneis, hoc margine lato lineolaque abbreviata dorsali fulvis, elytris fulvis, medio maculis 1ª–3ª parvis transversim positis fuscis; thorace antice utrinque post oculum et sulco antero-dorsali impresso, cætera superficie subæquali disperse punctato; elytris regulariter punctato-striatis, interstitiis lævibus, subsuturali lato biseriatim confuse punctato. Pygidium minute confluenter rugulosum, subopacum.

Long. 6 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Three examples, intermediate in form between *A. calligrapha* and *A. compressicollis*, and also allied to *A. chiriquina*. The lateral depression of the thorax is confined to a moderate space near the fore margin on each side instead of occupying the greater portion of the half disc as in *A. compressicollis*.

9. **Anomala barbicollis.**

Præcedenti affinis; oblonga, thoracis lateribus postice subparallelis, antice utrinque prope angulum depresso, disco utrinque plaga magna setifero-punctata, cætera superficie convexa, subtiliter parce punctulata; elytris punctato-striatis, interstitiis paullo convexis, lævibus, subsuturali lato, confuse multipunctato, postice unistriato, striis 1ª, 3ª, 4ª et 9ª 10ªque prope apicem profundis; pygidio subtilissime transversim striato-opaco, æqualiter convexo; capite et thorace politis, viridi-æneis rufo-translucentibus, hoc lateribus fulvis; elytris fulvis, fasciis duabus undulatis (interdum latis et diffusis) nigro-fuscis vel castaneis.

Long. 9 millim.

Hab. Guatemala, Sinanja in Vera Paz (*Champion*).

Two female examples only.

10. **Anomala cribriceps.** (Tab. XII. fig. 7.)

♂ ovata, ♀ oblongior postice dilatata, glabra, nitida, subtus fusca, pedibus fusco-æneis (interdum rufo-testaceis), capite thoraceque subfusco-æneis vel cupreis vel capite cupreo, thorace fusco-æneo (raro æneo-rufis), elytris testaceo-fulvis maculis paucis fuscis; capite plano usque ad verticem crebre (postice discrete) punctato, clypeo semiovato paullo reflexo; thorace æqualiter convexo et distincte punctato, lateribus regulariter arcuatis, margine basali integro; elytris minus regulariter punctato-striatis, hic illic transverse plicatis, interstitio subsuturali lato valde irregulariter usque ad apicem punctato. Pygidium æqualiter convexum, minute rugulosum, punctis intermixtis.

Elytrorum maculis typice quinque in fasciam obliquam ab humero (haud callum tegente) usque ad medium prope suturam dispositis; variat maculis intermediis vel omnibus obsoletis; interdum plaga marginali posteriore vel tota superficie (maculis basalibus discoidalibusque exceptis) nigro-fusca.

Long. 7–10 millim. ♂ ♀.

Hab. Mexico, Colima city, Tonila in Colima, Chilpancingo, Guadalajara (*Höge*), Yolos (*Sallé*).

A large number of examples. Although the form, especially of the female, is different, this species belongs to the group of which *A. undulata* and *A. variegata* (Latr.) are the types. The slender upper part of the cleft anterior claws is as long as, or longer than, the lower, which is dilated towards the base in the male. *A. cribriceps* is remarkable for the close and comparatively uniform punctuation of the head, which is opaque, except the slightly shining posterior part of the vertex. An example from Tonila is figured.

11. **Anomala punctatipennis.**

Anomala punctatipennis, Blanch. Cat. Coll. Ent. i. p. 187[1].

Hab. Mexico, Cordova, Vera Cruz[1] (*Sallé*); Guatemala (*Sallé*).

Four examples in the Sallé collection bearing this name. The species is not so "breviter ovata" as most others of the same group; the elytra are a little dilated behind, and the thorax does not broaden towards the base and is nearly parallel-sided behind the dilatation. The "profunde striato-punctatis" of Blanchard's diagnosis is a distinctive character, the punctures of the striæ being large, deep, and circular or umbilicated, each seated in a larger impression. Size 6–7 millim.

12. **Anomala zapotensis.** (Tab. XII. fig. 8.)

Late ovata, glabra, flavo-testacea, capite thoraceque æneo-tinctis hoc signaturis duabus vagis fuscis, elytris castaneo-fuscis fasciis duabus dentatis flavo-testaceis, altera a scutelli apice usque ad medium basin curvata, altera magis transversa mediana; clypeo subsemicirculari, crebre rugoso-punctato, fronte sparsim punctata; thorace brevi et lato, ante medium perparum dilatato quasi a basi usque ad apicem angustato, disperse punctato, margine basali integro; elytris regulariter et profunde punctato-striatis, interstitio lato subsuturali nullo. Pygidium dense transverse confluenter strigosum. Mesosternum antice declive anguste obtuse carinatum.

Long. 9 millim.

Hab. Guatemala, Zapote (*Champion*).

Two female examples only. A distinct and handsome species. The relatively

great width of the body is not accompanied by a corresponding convexity, so that the surface appears flatter than in other species of the group.

13. **Anomala histrionella.** (Tab. XII. fig. 9.)

Ovata, glabra, fulvo-testacea interdum subtus cum pedibus nigro-ænea, capite thoraceque viridi-æneo-tinctis, illo vertice, hoc plaga magna discoidali multilobata (medio interdum lineis 2 flavis fere divisa), saturatius viridi-æneis, elytris striis omnibus macula utrinque antero-discoidali fasciisque duabus undulatis, castaneo-rufis, fasciis interdum dilatatis vel late diffusis hinc elytris toto castaneo-rufis maculis discretis elongatis flavis; capite toto subconfluenter punctato, clypeo semicirculari; thorace lateribus arcuatis, antice plus quam postice angustato, macula utrinque laterali nigro, margine basali integro; elytris utrinque striis punctatis 12 profundis interstitiisque punctulatis; pygidium dense subtiliter confluenter strigulosum. Mesosternum inter coxas depressum. ♂. Tarsi antici ungue majore haud angulatim dilatato.
Long. 9–10 millim.

Hab. Mexico, Acapulco, Ventanas, Iguala (*Höge*); Nicaragua, Chontales (*Belt*).

A large series of examples collected by Herr Höge, one of which is figured. A single specimen from Chontales agrees with the prevailing Mexican form in markings.

14. **Anomala** ——.

Hab. Nicaragua, Granada (*Sallé*).

A single example of a species apparently distinct.

15. **Anomala** ——?

Hab. Mexico, Cuernavaca (*Sallé*).

A single example of a species almost exactly agreeing in sculpture with *A. micans*, but from its narrow simple mesosternum and straight unthickened lateral margins of the elytra belonging to a different group.

16. **Anomala** ——?

Hab. Mexico (*Sallé, ex coll. Sturm*).

A single example of a species allied to the preceding, but having a rather wider mesosternum slightly thickened at the apex.

17. **Anomala championi.** (Tab. XII. fig. 10.)

Elongato-ovata, fulvo-testacea, nitida, vertice macula utrinque thorace signatura magna sexlobata elytrisque macula basali humeralique, fascia mediana lata valde dentata et dilacerata, guttis maculisque apicalibus, nigro-æneis; corpore subtus nigro-æneo, pedibus flavis nigro-maculatis; capite densissime punctato, clypeo postice haud ampliato margineque parum elevato; thorace brevi et lato, lateribus subregulariter arcuatis, angulis posticis obtusis, dorso valde inæquali utrinque transversim bicalloso, rugoso et sparsim grosse punctato; elytris grosse punctato-striatis, utrinque costulis tribus subelevatis, lateribus confuse rugulosopunctatis, interstitio 2° confuse sub-biseriatim grosse punctato. Pygidium elytris dimidio obtectum, dense confuse rugulosum, longe setosum. Mesosternum angustum, inter coxas haud tumidum. Tibiæ anticæ bidentatæ, sed dente tertio rudimentario, posticæ suratæ. Tarsi 4 anteriores ungue externo profunde fisso.
Long. 10 millim. ♀.

Hab. Guatemala, Zapote (*Champion*).

Of this prettily marked and very distinct species there is only a single example.

18. **Anomala tolensis.**

Ovata, nitida, subtus cum pedibus ænea vel rufo-ænea, capite thoraceque cupreis vel nigro-æneis, elytris fulvo-testaceis, sutura (versus scutellum dilatata) margine sub humero et strigis indistinctis intermediis nigro-fuscis vel castaneis; capite crebre punctato, vertice lævi, clypeo subsemicirculari, reflexo; thorace medio paullo dilatato antice magis quam postice angustato, sat æqualiter convexo, subgrosse disperse punctato, margine basali integro; elytris lateribus sub callo humerali valde impressis, striis utrinque circiter 13 punctatis mediocriter impressis 2^a hic illic duplicata vel 2^a et 3^a confusis. Pygidium sat magnum, mediocriter convexum, minute et dense confluenter strigulosum, opacum. Mesosternum inter coxas imprimis paullulum convexum deinde planum declive. ♂. Tarsi antici ungue majore lato sed haud subangulatim dilatato.

Long. 10–11 millim. ♂ ♀.

Hab. Panama, Tolé (*Champion*).

Five examples. In this species the mesosternum is somewhat variable in width, and in those specimens in which it is broader the apex is slightly tumid and shining.

19. **Anomala ochrogastra.** (Tab. XII. fig. 11.)

Elongato-ovata, nitida, viridi- vel cupreo-ænea, elytris abdominisque fulvo-testaceis, illis sutura margineque, hoc segmentis postice, anguste fusco-marginatis; capite creberrime confluenter (occipite sparsim) punctulato, clypeo subsemicirculari margine reflexo; thorace medio dilatato, antice plus quam postice angustato, æqualiter convexo, disperse punctato, margine basali (sulculo profundo) integro; elytris utrinque striis punctatis geminatis tribus, interspatiis confuse (2° versus basin uniseriatim) punctatis, subsuturali latissimo et multipunctato, punctis et striis mediocriter impressis. Pygidium amplum, æqualiter convexum, nitidum, ♂ arcuatim strigosum, ♀ discrete punctatum. Mesosternum inter coxas depressum. ♂. Unguis anterior major subangulatim dilatatus, dente superiore haud breviore.

Long. 14–15 millim. ♂ ♀.

Hab. Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

In this species the mesosternum, although always decidedly narrow, varies in being thickened or not at the apex. A large number of examples.

20. **Anomala flavizona.** (Tab. XII. fig. 12, ♂.)

Elongato-ovata, fulvo-castanea ænescens, crebre punctulata, thorace lateribus elytrisque post medium fascia angusta pallide testaceis; thorace (marginibus exceptis) densissime erecto piloso; subtus æneo-picea, pedibus pallide testaceis fusco-nigro maculatis; capite grosse confluenter punctato, vertice lævi, clypeo sat brevi subsemicirculari, antice (epistoma) alte verticali politissimo; thorace relative parvo et brevi, medio paullo dilatato, angulis posticis obtusis, margine acuto basali integro, grosse confluenter punctato; elytris undique sat dense punctulatis, stria suturali et striis costalibus, præcipue postice, paullo impressis et distinctis; pygidio arcuatim strigoso et pilifero-punctulato, obscure æneo opaco; tibiæ anticæ bidentatæ. Mesosternum subangustum, apice læve paullulum tumidum. Tarsi antici ♂ ungue majore haud subito dilatato, dente superiore tenui haud breviore, ♀ gracili profunde fisso.

Long. 12–13 millim. ♂ ♀.

Hab. Guatemala, Zapote, Senahu, Purula, Sinanja (*Champion*).

Six examples. We figure a male specimen from Purula.

21. **Anomala veræcrucis.**

Oblonga, subovata, fulvo-testacea, thorace saturate viridi-æneo vitta marginali medio intus sinuata fulva; capite rufo, elytris sutura angusta lineaque marginali subhumero (interdum margine lata irregulari) nigro-fuscis. Capite crebre punctato, vertice lævi, clypeo subsemicirculari, paullo reflexo; thorace lateribus sat regulariter arcuatis, angulis postice subrotundatis, margine basali integro, sat fortiter subdisperse punctato; elytris utrinque costis tribus vix elevatis striis punctatis rectis delimitatis, interstitiis inter costas 1^m^ et 2^m^ stria paullo irregulari unica, inter costas 2^m^ et 3^m^ parce confuse punctato, interstitium subsuturali lato multipunctato, stria suturali valde impressa fere recta, striis 2^a^, 3^a^ et 7^a^ 8^a^que prope callum apicalem, profunde exaratis. Pygidium ♂ confluenter haud profunde arcuato-rugulosum, parum nitidum, ♀ discrete punctatum, nitidum. Tarsi anteriores articulo unguiculari subtus dentato. Tibiæ anticæ bidentatæ. Tarsi anteriores ungue majore ♂ haud subangulatim dilatato, dente superiore breviore, ♀ fere æqualiter fisso.

Long. 11–12 millim. ♂ ♀.

Hab. Mexico, Vera Cruz (*Sallé*); Guatemala, San Isidro (*Champion*).

This and the following species much resemble the smaller examples with yellow elytra of *A. cincta*, and still more *A. costaricæ*, but the narrower simple mesosternum and bidentate anterior tibiæ amply distinguish them.

22. **Anomala sejuncta.**

A præcedente differt thoracis angulis posticis fere rectis, margine ante angulum leviter sinuato margineque fulvo antice dilatato posticeque attenuato; elytris lævioribus striisque prope callum apicalem minus profundis.

Long. 12 millim.

Hab. Guatemala (*Sallé*), Dueñas and near the city (*Champion*); Costa Rica (*Van Patten*).

Four examples. The colour of the head is coppery red and of the thorax copperyæneous or brassy-black, the elytra having no dusky marking except a narrow sutural border. The pygidium is much more densely and deeply sculptured. Costa Rican examples have the hind angles of the thorax less rectangular than those from Guatemala.

23. **Anomala ——?**

Hab. Guatemala (*Sallé*).

A single example of a doubtful species.

24. **Anomala höpfneri.** (Tab. XII. fig. 13, ♀.)

Anomala inconstans, var., Burm. Handb. der Ent. iv. 1, p. 253[1].

Oblongo-ovata, postice dilatata, flavo-testacea, capite castaneo-rufo, thorace plaga magna basi attingente ænescenti-castanea elytrisque vitta suturali (medio dilatata) vitta postero-marginali et sæpe callo humerali, nigris; clypeo postice parum dilatato, marginibus reflexis; thorace relative parvo, ante medium subangulatim dilatato, angulis posticis subrectis, disperse punctulato, margine basali integro; elytris striis vix impressis, punctulatis valde irregularibus vel confusis, juxta costas planissimas solum paullo rectioribus,

interstitio suturali lato. Pygidium convexum, punctatum. Pectus et coxæ flavo-villosa; tarsorum anticorum articulo unguiculari subtus vix perspicue dentato.

♂. Tibiæ anticæ bidentatæ, tarsi antici ungue majore elongato acuto basi subtus sinuato, dente superiore tenui et sat brevi.

♀. Tibiæ anticæ tridentatæ vel bidentatæ, dente superiore brevissimo interdum obsoleto. Tarsi antici ungue majore fere æqualiter fisso.

Long. 12–15 millim. ♂ ♀.

Hab. Mexico [1], Puebla, Tepansacualco, Peras, Oaxaca (*Sallé*).

Burmeister mentioned the differences of sculpture which distinguish *A. höpfneri* (as a variety) from the more southerly forms of *A. inconstans*, but did not notice the peculiarity of dentition of the anterior tarsal claws in the male, which I find quite constant. The markings of *A. höpfneri* are also different from those of *A. inconstans*. The sutural vitta of the elytra is nearly always dilated in the middle, and the apical margin has a broad velvety-black border seldom entirely absent. The broad trapezoidal spot of the thorax reaches the base, but there is generally a pale transverse streak in the middle of the basal part. An example from Peras is figured.

25. **Anomala inconstans.** (Tab. XII. fig. 14.)

Anomala inconstans (partim), Burm. Handb. der Ent. iv. 1, p. 252[1].
Anomala lurida (Fabr.), Burm. loc. cit. p. 562.

Hab. Mexico [1], Peras, Yolos, Oaxaca (*Sallé*); Guatemala (*Sallé*), Guatemala city (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).—South America, Colombia, Brazil [1].

In the male the larger claw of the anterior tarsi is long, subtriangularly dilated near the base only, and the upper tooth is nearly as long as the lower; in the female the upper tooth is longer than the lower. The larger size (16–17 millim.), more distinctly tricostate elytra, with thickly punctured intervals, flatter pygidium, much more obtuse thoracic hind angles, and different elytral markings (broad and dark discoidal streaks being the prevailing pattern) further distinguish the species from *A. höpfneri*. The subtridentate anterior tibiæ in the female is a more constant character in this species than in *A. höpfneri*.

The examples from Chiriqui (two in number) differ from all the Mexican and Guatemalan individuals by the elytra being yellow with the suture (narrowly) and the humeral callus only black, and by the narrower and less punctured intervals between the costæ.

Burmeister, in his appendix, stated his belief that his species was probably the *A. lurida* of Fabricius—a suggestion of change of name promptly adopted, as usual in such cases, by subsequent writers. The description of Fabricius, however, as given in the Syst. Entom., does not in the least apply to *A. inconstans* in any of its varieties. The "caput nigrum" and "elytra punctis duobus ad suturam et unico versus apicem" must refer to some species of a different group of *Anomalæ*. The country of Fabricius' species was unknown. We figure a Guatemalan specimen of *A. inconstans*.

26. **Anomala gemella.** (Tab. XII. fig. 15.)

Anomala gemella, Say, Boston Journ. Nat. Hist. i. p. 181[1]; Complete Writings, ii. p. 654; Burm. Handb. der Ent. iv. 1, p. 253[2].

Hab. Mexico [1 2], Tepansacualco (*Sallé*), Mexico city (*Flohr*).

Closely allied to the two preceding; rather smaller and more oblong, the elytra sprinkled throughout with short blackish streaks, the streaks in some examples condensing into dusky patches. A good distinguishing character is the perfectly rectangular hind angles of the thorax. The three examples before me appear to be females.

27. **Anomala chevrolati.** (Tab. XII. fig. 16.)

Sat elongata, angusta, flavo-testacea, capite maculaque thoracica mediocri antero-dorsali castaneo-rufis, elytris vitta suturali per scutelli latera usque ad basin ducta nigra, margine posteriore interdum anguste nigra; capite crebre punctato, clypeo postice vix dilatato; thorace angulis posticis obtusis sed distinctis, margine basali integro, disperse punctulato; elytris punctulato-striatis, utrinque minus distincte tricostatis, costis versus apicem convexis striisque interstitialibus paullo confusis, interstitio suturali lato punctulato, subsuturali multipunctato. Tarsi antici articulo unguiculari subtus haud dentato.

♂. Tarsi antici ungue majore haud dilatato, dente superiore parum breviore; pygidium discrete punctatum.

♀. Tarsi anteriores ungue majore subæqualiter fisso; pygidium densius et aspere punctato-rugulosum. Tibiæ anticæ semper bidentatæ.

Long. 12 millim. ♂ ♀.

Hab. Mexico, Yolos (*Sallé*), Ventanas in Durango (*Höge*).

Seven examples. Bears the MS. names *A. suturalis* and *A. suturella* in the Sallé collection; the former name has been used by Lansberge for a described African species.

28. **Anomala centralis.**

Anomala centralis, Leconte, New Species N. Am. Col. p. 78 (1863)[1]; Horn, Trans. Am. Ent. Soc. xi. p. 159[2].

Hab. North America, Peninsula of California [2], Cape San Lucas [1], Arizona [2].—Mexico, Sonora [2], Tres Marias Islands (*Forrer*).

Three examples agreeing fairly well with Dr. Horn's description and with a specimen from Arizona received from the late Mr. Morrison.

29. **Anomala ruatana.**

Oblongo-ovata, fulvo-testacea, capite plagaque magna thoracis subfusco-cupreis, elytris sutura margineque partim nigro-fuscis; capite crebre confluenter punctato vertice læviore, clypeo postice parum ampliato; thorace lateribus regulariter arcuatis, antice angustato, angulis posticis subrectis, margine basali integro, disperse sat fortiter punctato; elytris punctato-striatis, interstitio 2° (subsuturali) multipunctato, 7° sub-biseriatim confuse punctato; pygidium ♂ haud profunde discrete punctatum, ♀ crebrius rugulosum. Tibiæ anticæ ♂ ♀ bidentatæ. Tarsi antici articulo unguiculari subtus (intus) acute dentato, ungue majore elongato sat angusto, dente superiore tenui abbreviato.

Long. 10 millim.

Hab. Honduras, Ruatan Island (*Gaumer*).

Two examples. A Mexican *Anomala* in my collection, received from A. Deyrolle

many years ago, without name, belongs to this species; it is probably from some locality in Southern Mexico. This specimen is rather smaller ($8\frac{1}{2}$ millim.), and has the black sutural vitta much broader, and the lateral and apical borders of the elytra and a large part of the scutellum also black; but the form and sculpture are similar.

30. **Anomala flavilla.** (Tab. XII. fig. 18.)

Oblonga, flavo-testacea, capite rufiore (vertice interdum fusco), thorace maculis duabus (transversim positis, interdum obsoletis) elytrorumque sutura angusta (interdum dilatata) et toto limbo exteriore fusco-nigris; clypeo sat parvo, semicirculari; thorace lateribus arcuatis, angulis posticis rotundatis, margine basali integro, æqualiter convexo, disperse punctulato; elytris regulariter punctato-striatis, interstitio lato subsuturali confuse (haud numerose) punctato; pygidio discrete punctato, nitido, convexo. Tibiæ antice subtridentatæ.

Tarsi antici ungue majore, ♂ medio leviter dilatato, dente superiore tenui paullo breviore, ♀ graciliore longioreque apice fisso.

Long. 8–9 millim.

Hab. Mexico, Tres Marias Islands, Ventanas in Durango (*Forrer*).

Four examples. A specimen from Ventanas is figured.

31. **Anomala decolor.**

A. flavipenni (Burm.) affinis et similis, sed differt tibiis anticis tridentatis etc. Oblongo-ovata, rufo-testacea, nitida (thorace interdum plagis duabus rufescentibus), vertice callo humerali suturaque anguste fuscis; clypeo sicut in *A. flavipenni* concavo sed minus quadrato, subsemicirculari, fortiter sed discrete punctato; thorace lateribus arcuatis, angulis posticis fere rotundatis, margine basali integro, disperse punctato; elytris magis regulariter punctato-striatis, interstitiis subsuturali (lato) et humerali confuse (sub-biseriatim) punctatis striaque tertia (ab interstitio subsuturali) paullo irregulari; pygidio discrete punctato; tibiæ anticæ dente superiore (3°) prominente. Mesosternum inter coxas angustissimum. Unguis major anterior (♀) sicut in *A. flavipenni* fissus. Antennæ cum clava sat elongatæ.

Long. 11–12 millim. ♀.

Hab. Mexico (*Flohr, in coll. Bates*).

Females only. Although the four examples are not so ticketed I believe they came from the neighbourhood of the city of Mexico.

32. **Anomala megalops.** (Tab. XII. fig. 19.)

A. flavipenni (Burm.) affinis, sed valde differt oculis maximis globosis. Oblongo-ovata, rufo-testacea, nitida, fronte et vertice sutura calloque humerali nigris, thorace interdum plagis duabus vagis fuscis; clypeo postice parum dilatato, margine sat alte elevato parce subtiliter ruguloso, oculis magnis globosis; thorace brevi et lato, lateribus arcuatis, angulis posticis valde obtusis, margine basali integro, disperse punctato; elytris sicut in *A. decolori* punctato-striatis, interstitiis subsuturali et humerali parce confuse punctatis; pygidio convexo, discrete punctato; tibiis anticis tridentatis. Metasternum inter coxas angustissimum.

♂? Antennæ elongatæ, clava valde elongata gracilis. Tarsi antici ungue majore elongato nullomodo dilatato, dente superiore breviore, articulo unguiculari subtus valde dentato.

Long. 11 millim. ♂?

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*).

Two examples only, both apparently males. The antennal joints 3–5 are rather longer than usual in the *Anomalæ*, and the club is very long and slender. The same

feature is presented by *A. flavipennis*, though in rather less degree, and more strongly pronounced in the male than in the female. As we have seen, the antennal club is also elongate in *A. decolor*.

33. **Anomala hispidula.** (Tab. XII. fig. 20, ♀.)

Oblonga, supra breviter (thorace densius) erecte griseo-pilosa, subtus fere glabra; cupreo-fusca, thorace lateribus elytrisque maculis valde irregularibus plus minusve confluentibus testaceo-fulvis, femoribus tibiisque testaceo-variis; interdum fere toto cupreo-fusca; capite crebre confluenter punctato, plano, clypeo semicirculari margine parum elevato; thorace lateribus arcuatis, angulis posticis subrotundatis, margine basali acute delimitato, integro, tota superficie densissime subconfluenter punctato; elytris dense rugulosis, punctulis intermixtis, punctato-striatis, costulis tribus parum distinctis, interstitio subsuturali lato confuse multipunctato. Pygidium densissime rugulosum, opacum, longe pilosum. Tibiæ anticæ bidentatæ. Mesosternum inter coxas mediocriter angustum.

♂. Tarsi antici ungue majore brevi curvato lato, dente superiore tenui breviore.

Long. 9–10 millim. ♂ ♀.

Hab. Guatemala, San Gerónimo (*Champion*).

Four examples.

34. **Anomala** —— ?

Hab. Mexico, Vera Cruz (*Sallé*).

A single female example, distinct from any of the foregoing.

35. **Anomala** —— ?

Hab. Nicaragua, Chontales (*Belt*).

A single imperfect example of a species of this group, also distinct from all the foregoing.

36. **Anomala** —— ?

Hab. Panama, Volcan de Chiriqui (*Champion*).

A single example of a species of the prevailing coloration of the present group, and without marked peculiarity.

37. **Anomala denticollis.** (Tab. XII. fig. 17.)

Anguste oblonga, fulvo-testacea, capite fulvo-rufo, thorace fusco-æneo lateribus anguste testaceis et deflexis, elytris sutura (prope scutellum latiore et ante medium in maculam ovatam dilatata) callisque humerali apicalique nigris, abdomine fusco; capite creberrime (vertice sparse) punctato, media fronte concava clypeoque brevi vel valde transversim subquadrato, margine sat alte elevato; thorace relative brevi, medio sat abrupte dilatato, angulis posticis longe productis acutis, undique punctulato et subinæquali, margine basali integro; elytris sat regulariter punctato-striatis, interstitio subsuturali sub-biseriatim confuse punctato striaque prope callum humeralem irregulari.

♀. Pygidium convexum, sat dense punctatum, nitidum. Tibiæ anticæ valide bidentatæ; tarsi anticæ ungue majore subæqualiter breviter fisso.

Long. 12 millim.

Hab. Guatemala, Cerro Zunil (*Champion*).

Although only a single specimen is to hand, the strongly-marked characters of this species justify its being described.

38. **Anomala polygona.**

Elongato-ovata, cupreo-ænea, polita, thorace lateribus (anguste) elytrisque fulvo-testaceis, his plaga circumscutellari, callis humerali apicalique fascia mediana valde undulata et signaturis vagis posterioribus nigro-æneis, pedibus cupreo-rufis; capite minus crebre punctato spatiis lævibus, clypeo trapezoidali, margine minime elevato; thorace antice valde angustato, medio sat abrupte angulatim dilatato, angulis anticis porrectis et posticis valde productis subspiniformibus, sparse punctulato, basi (juxta angulos excepta) immarginato; elytris valde irregulariter seriatim punctatis, nec striatis, hic illic punctis in foveolas agglomeratis. Pygidium grossissime rugoso-punctatum, nitidum, cuprascenti-rufum fusco-maculatum. Tibiæ anticæ acute tridentatæ. Tarsi antici articulo unguiculari subtus acute dentato, ungue majore (♀) profunde fisso; tibiæ posticæ valde suratæ. Mesosternum inter coxas declive mediocriter angustum, planum. Pectus fulvo-villosus.

Long. 12 millim. ♀.

Hab. Costa Rica (*Dr. Horn, in coll. Bates*).

One example only.

39. **Anomala trapezifera.**

A. polygonæ evidenter affinis, sed thoracis forma valde diversa. Anguste oblonga, fusco-nigra, subnitida, thorace lateribus (irregulariter) elytrisque undique maculis et signaturis fulvis, pedibus abdomineque fulvo-plagiatis; capite parcissime haud profunde punctato, clypeo late trapezoidali; thorace a basi usque ad apicem angustato, lateribus leviter arcuatis, angulis anticis acutis posticis rectis (apice obtusis), disperse punctato, margine basali integro; elytris striato-punctatis, striis rugulis transversis multifariam interruptis, interstitio subsuturali lato confuse multipunctato; pygidio nigro fulvo-maculato, disperse punctato, nitido. Antennæ fulvæ. Tarsi antici articulo unguiculari subtus dentato; ungue majore (♀) gracili apice fisso; tibiæ anticæ tridentatæ. Mesosternum inter coxas declive mediocriter angustatum. Pectus fulvo-villosus.

Long. 14 millim. ♀.

Hab. Costa Rica (*Dr. Horn, in coll. Bates*).

One example only.

40. **Anomala binotata.**

Melolontha binotata, Gyllenhal in Schönh. Syn. Insect. i. 3, Appendix, p. 106[1].

Anomala binotata, Burm. Handb. der Ent. iv. 1, p. 262; Horn, Trans. Am. Ent. Soc. xi. pp. 158 & 164 (1884)[2].

Hab. North America[1 2].—Mexico, Northern Sonora (*Morrison*), Pinos Altos in Chihuahua (*Buchan-Hepburn*).

41. **Anomala foraminosa.** (Tab. XII. fig. 21.)

A. binotatæ affinis. Magis ovata, cupreo- vel viridi-æneo-fusca, nitida, capite cupreo-rufo, elytris fulvis, subseriatim punctatis et nigro-foveolatis, seriebus foveolarum utrinque suturali et tribus geminatis, interstitio lato subsuturali confuse multipunctato; pygidio densissime striguloso, opaco, griseo-piloso; clypeo semi-

circulari, confluenter punctato; thorace ante medium subangulatim paullo dilatato, margine basali medio subinterrupto, superficie paullo inæquali, irregulariter sat grosse punctato; pectore griseo-villoso. Tibiæ anticæ bidentatæ. Mesosternum inter coxas lato, apice (juxta metasternum) interdum transverse subtumidum.

♂. Tarsi antici ungue majore brevi dilatato, dente superiore haud breviore.

Long. 11–12 millim. ♂ ♀.

Hab. Mexico, Puebla, Teapa (*Sallé*), Jalapa, Yautepec, Oaxaca (*Höge*); British Honduras, R. Hondo (*Blancaneaux*); Guatemala, Zapote, Volcan de Atitlan, Pantaleon (*Champion*); Panama, Bugaba (*Champion*).

Distinguished from *A. irrorata*, Blanch., with which it agrees in the densely strigulose opaque pygidium, by the three twin rows of foveoles on the elytra sharply distinguished from the other smaller punctures.

Thirty examples, varying a little in the number of black spots on the elytra.

The foveæ of the elytra are mostly a little elongated, and in them are aggregated from two to five of the ordinary punctures, leaving spaces between the foveæ free of punctures.

I have adopted (with a slight alteration of termination) the MS. name given to the species by Chevrolat. An example from Atitlan is figured.

42. **Anomala irrorata.** (Tab. XII. fig. 22.)

Anomala irrorata, Blanch. Cat. Coll. Ent. i. p. 187[1].

Hab. Mexico[1], Cuernavaca, Puebla, Tuxtla, Catemaco, Oaxaca (*Sallé*), Colima city, Yautepec, Oaxaca (*Höge*).

There are many examples in the Sallé collection labelled *A. irrorata*, Blanch., and they agree with Blanchard's description as regards the sculpture of the elytra, which differs from that of *A. foraminosa* in being more irregular and stronger, and wanting the geminated rows of foveoles. Blanchard's phrase runs "Eltyris pallide testaceis, profunde seriato-punctatis, punctis omnibus maculaque media versus suturam piceis." A specimen from Oaxaca is figured.

43. **Anomala sticticoptera.**

Anomala sticticoptera, Blanch. Cat. Coll. Ent. i. p. 187[1].

Hab. Mexico[1], Cordova (*Sallé*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Volcan de Atitlan, Zapote, San Gerónimo, Purula, Sabo (*Champion*); Costa Rica (*Van Patten*), Irazu (*Rogers*).

Distinguished from the three preceding species by the very finely and less densely strigose and glabrous pygidium. The colour and sculpture of the elytra are similar, but have a wider range of variation; some Guatemalan examples have the elytra clear testaceous with castaneous suture; in others the black spots coalesce and the elytra become blackish-castaneous with a few tawny patches. In most examples the

geminated lines of punctures are larger than the others and dusky, but they do not form such distinct linear foveoles as in *A. foraminosa*.

Several examples in the Sallé collection are labelled *A. sticticoptera*, Blanch., others *A. adspersa*, Deyr. MS.

44. **Anomala atomogramma.** (Tab. XII. fig. 23.)

A. binotatæ (Gyll.) affinis et similis, sed duplo major pygidioque minus dense striguloso, nudo, subnitido etc. Oblongo-ovata, obscure viridi- vel cupreo-ænea, nitida, elytris testaceo-fulvis, sutura, plaga subhumerali elytrorumque punctis fusco-nigris; clypeo subsemicirculari, margine leviter reflexo, cum fronte confluenter punctulato; antennis nigro-fuscis; thorace ante medium mediocriter dilatato, postice paullo dilatato, angulis posticis subrectis apice obtusis, margine basali integro, subtiliter punctato; elytris punctato-striatis, striis parum impressis et punctis hic illic in lineas condensatis, interstitio subsuturali latissimo confuse multipunctato, interstitio humerali sub-biseriatim confuse punctato; pectore fulvo-villoso. Pygidium nitidum, nudum, rugulis punctatis brevibus transversis. Tibiæ anticæ bidentatæ; tarsi antici articulo unguiculari subtus dentato. Mesosternum inter coxas sat angustum, declive. ♂. Tarsi antici ungue majore lato versus basin dilatato, dente superiore vix breviore.

Long. 17 millim. ♂ ♀.

Hab. Mexico, Presidio (*Forrer*), Tuxtla (*Sallé*); Guatemala, Aceytuno, Purula (*Champion*).

In some Mexican specimens the elytral punctures are but very slightly infuscated. Nine examples. We figure an individual from Presidio.

45. **Anomala ——?**

Hab. Mexico, Playa Vicente (*Sallé*).

A single example, very imperfect (wanting the tarsi), of a species apparently distinct.

46. **Anomala ——?**

Hab. Panama, Chiriqui (*coll. Bates*).

A single female example of a species allied to *A. sticticoptera*, but apparently quite distinct.

47. **Anomala millepora.**

Ovata, obscure cupreo- vel viridi-ænea, elytris castaneo-rufis, sutura et vitta vaga marginali fusco-nigris, interdum disco nigrescente; clypeo lateribus rectis, margine elevato, toto capite densissime sed subdiscrete punctulato; thorace ante medium subangulatim postice haud dilatato, angulis posticis obtusis sed distinctis, margine basali medio fere interrupto, undique sat dense punctulato; elytris toto subdense punctulatis, disco et lateribus punctulis subseriatim dispositis. Pygidium metallicum, subopacum, densissime et subtiliter confluenter rugulosum quasi alutaceum, glabrum; corpore subtus et pedibus metallicis, his paullulum picescentibus, pectore fulvo-villoso; tibiis anticis bidentatis. Mesosternum sat angustum declive. ♀. Tarsi 4 anteriores ungue exteriore profunde fisso. ♂. Tarsi antici ungue majore lato haud subito dilatato, dente superiore vix breviore.

Long. 14–15 millim. ♂ ♀.

Hab. Guatemala, Volcan de Atitlan (*Champion*).

Three examples. The fine, dense, and regular punctuation, especially of the elytra, in which on close examination it is found to be arranged in rather uneven lines placed very near together on the disc and sides, distinguishes this species.

48. **Anomala ——?**

Hab. Mexico, Cuernavaca (*Höge*).

A single example of a doubtful species.

49. **Anomala ochroptera.**

Oblongo-ovata, polita, æneo-fusca, elytris ochreis, sutura (anguste) margineque laterali prope humeros nigro-fuscis; subtus cum pedibus antennisque testaceo-rufa, polita; capite dense confluenter, vertice discrete, punctatis, clypeo postice vix ampliato, margine reflexo; thorace postice haud latiore, lateribus arcuatis, margine basali integro sulculo profundo, supra disperse punctulato; elytris haud profunde punctato-striatis, interstitio subsuturali et humerali confuse multipunctatis; pygidio dispersissime transverso-punctato, polito. Tibiæ anticæ bidentatæ denteque tertio brevissimo, parum distincto. Mesosternum sat latum, sed apice nec productum nec tumidum. ♀. Tarsi 4 anteriores ungue majore profunde fisso, dente superiore haud breviore.

Long. 12–14 millim. ♀.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Nicaragua, Chontales (*Belt*).

Two examples, females. The species, though more oblong, resembles the pale varieties of *A. cincta*; it comes, however, nearer to *A. veræcrucis* and *A. sejuncta*, with which it has in common the sharply incised and entire basal sulculus of the thorax.

2. *Mesosternum latior, apice plus minusve incrassatum.*

50. **Anomala amphicoma.** (Tab. XII. fig. 24, ♂.)

Ovata, æneo-fusca, undique densissime erecte pilosa pectoreque villoso; capite toto discrete punctato et inter puncta subtiliter ruguloso, clypeo postice parum latiore; thorace ante medium mediocriter dilatato, postice haud latiore, angulis posticis obtusis sed distinctis, margine angusto et acuto, basali integro, toto densissime pilifero-punctulato; elytris undique confluenter rugulosis, striis (suturali excepto) grosse punctatis parum distinctis; pygidio densissime striguloso fulvo-hirto, opaco. Tarsi antici articulo unguiculari subtus dente valido acuto; tibiæ anticæ bidentatæ, 4 posticæ grossissime elongato-punctatæ; mesosternum inter coxas mediocre, declive, apice paullo incrassatum sed haud elevatum. ♂. Tarsi antici ungue majore brevi versus basin dilatato, dente superiore distincte breviore; intermedii ungue exteriore gracili, fisso.

Long. 12 millim. ♂ ♀.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Four examples.

51. **Anomala eucoma.**

Ovata, cupreo- vel æneo-fusca, undique densissime erecte fulvo-pilosa, elytris fasciis latis indistinctis; capite obscure rufo dense subconfluenter punctato, clypeo postice parum latiore; thorace ante medium perparum dilatato, postice (a supra visu) vix ampliato, angulis posticis obtusis sed distinctis, margine basali angusto integro, toto densissime pilifero-punctulato; elytris distincte sat regulariter haud profunde punctato-striatis, sed tota superficie transversim subtiliter rugulosa et punctulata, interstitio subsuturali

lato, confuse punctato et ruguloso; pygidium densissime punctato-rugulosum, opacum, pilosum. Tibiæ anticæ bidentatæ, 4 posticæ grossissime elongato-punctatæ. Mesosternum sat latum, inter coxas tumidulum. ♂. Tarsi antici ungue majore medio dilatato, dente superiore haud breviore.

Long. 12–14 millim. ♂ ♀.

Hab. GUATEMALA, Las Mercedes 3000 feet, San Isidro, Pantaleon (*Champion*); COSTA RICA (*Sallé, Van Patten*).

52. **Anomala semitonsa.** (Tab. XII. fig. 25, var.)

A. eucomæ proxime affinis, sed elytris sparsius pilosis et distincte punctato-striatis. Ovata, cupreo- vel æneo-fusca, capite thoraceque dense, elytris corporeque subtus sparsius, breviter erecte pilosis, elytris fulvo-testaceis, nitidis, humeris et fasciis duabus undulatis (1ª mediana, 2ª ante apicem interdum cum limbo nigro postero-laterali et apicali conjuncta) fusco-nigris; capite discrete punctato, interspatiis punctulatis, clypeo postice vix ampliato; thorace ante medium paullo dilatato, angulis posticis obtusis, margine basali angusto integro, toto dense sed discrete pilifero-punctato; elytris sat fortiter punctato-striatis, striis parum impressis interstitiisque angustis lævibus transversim rugulosis, interstitio lato subsuturali confuse multipunctato; pygidio densissime striguloso, longe piloso, opaco. Tibiæ anticæ bidentatæ, 4 posticæ grosse elongato-punctatæ; tarsi articulo unguiculari subtus acute dentato. Mesosternum sat latum, tumidum. ♂. Tarsi antici ungue majore brevi medio dilatato, dente superiore haud breviore.

Long. 11–12 millim. ♂ ♀.

Hab. PANAMA, Bugaba, David (*Champion*), Chiriqui (*Ribbe*).

The numerous examples from David are most typical; three labelled "Chiriqui" from Ribbe, and one from Bugaba, have less distinct striæ and punctulated and more hairy interstices. These have a tendency to connect *A. semitonsa* with *A. eucoma*. A Bugaba specimen is figured.

53. **Anomala sylphis.** (Tab. XIII. fig. 1.)

Gracilis, elongato-ovata, rufo- vel fulvo-testacea, nitida, capite, thorace, scutello corporeque subtus plus minusve viridi-æneis; interdum viridi-ænea, elytris nigerrimis; capite dense, clypeo confluenter, punctulatis, hoc plano, margine paullo elevato, semicirculari; antennarum clava nigra; thorace ante medium leviter dilatato, postice haud ampliato, marginis basalis sulculo acute exarato, supra dense subconfluenter punctulato (linea dorsali sublævi) et dense erecte piloso, toto vel plaga tantum trapezoidali, viridi-æneo; elytris glabris, punctulato-striatis, striis disci alternis haud impressis et incompletis, interstitiis lato subsuturali et humerali confuse punctatis; pygidio et propygidio dense ventroque sparsius incumbente cinereo-pilosis; pedibus gracilibus, tibiis posticis apice vix constrictis, sublævibus. Mesosternum latum, supra tumidum, sat prominens. ♂. Tarsi antici ungue majore brevi et lato, dente superiore valido haud breviore.

Long. 12 millim. ♂ ♀.

Hab. MEXICO, Cordova, Orizaba (*Sallé*).

54. **Anomala læsicollis.** (Tab. XIII. fig. 2, ♀.)

Elongato-ovata, politissima, viridi-ænea, clypeo antice thoraceque limbo laterali fulvo-testaceis, elytris æneo-castaneis; subtus cum pedibus saturatius ænea, abdomine interdum fulvescente, femoribus et tibiis fulvo-variegatis; clypeo semicirculari, confluenter punctato, vertice et fronte sparse punctulatis; thorace a basi ad apicem angustato, lateribus arcuatis, margine basali anguste subinterrupto, dorso subtilissime et parce punctulato utrinque callis duobus obliquis (interdum subobsoletis), interspatiis depressis; elytris punctulato-striatis, interstitio 2° latissimo, confuse subtiliter multipunctato. Pygidium paullo compressum, nitidum, confluenter strigulosum. Mesosternum sat latum et inter coxas tumidum. Tibiæ anticæ bidentatæ,

posticæ valde suratæ. ♂. Tarsi anticæ ungue majore prope medium dilatato, dente superiore haud breviore.

Long. 11 millim. ♂ ♀.

Hab. Guatemala, Cerro Zunil, Las Mercedes (*Champion*).

55. **Anomala** —— ?

Hab. Guatemala, Sinanja (*Champion*).

A single very imperfect example of a species deceptively similar to the above, but with a perfectly even thoracic surface, and remarkable for the extreme narrowness of the mesosternum combined with a somewhat prominent triangular apex (not tuberculiform), advancing beyond the suture of the metasternum.

56. **Anomala doryphorina.** (Tab. XIII. fig. 3.)

Gen. *Doryphoræ* (Fam. Chrysomelinæ) similis. Ovata, valde convexa, castaneo-rufa, polita, elytris utrinque litura ovata magna a humero (callum humerali cingente) per basin curvata usque ad suturam et recte usque prope apicem continuata ibique angulatim flexa et usque prope marginem lateralem extensa, flava; corpore subtus cum pedibus nigro-polito; clypeo postice parum ampliato, cum fronte dense confluenter punctato, margine sat elevato; vertice lævissimo; thorace a basi ad apicem angustato, lateribus leviter arcuatis, angulis posticis subrectis, margine basali medio interrupto; elytris seriato-punctulatis, seriebus alternis subobsoletis interstitiis subtilissime punctulatis, 2° lato, parce confuse punctulato; pygidio aspere densissime striguloso, opaco; pectore tenuiter griseo-hirto. Tibiæ anticæ bidentatæ, quatuor posteriores valde suratæ; tarsi antici articulo unguiculari subtus prope basin dente obtuso elongato. Mesosternum mediocriter latum, apice paullulum prominente, polito.

Long. 12 millim.

Hab. Guatemala, Panima in Vera Paz 1800 feet (*Champion*).

Two examples of the same sex, and, judging by the breadth of the larger claw of the anterior tarsi, probably males; the joint is, however, not abruptly dilated. The upper slender part of the cleft claws in the four anterior tarsi is decidedly shorter than the lower.

57. **Anomala chrysomelina.** (Tab. XIII. fig. 4.)

Præcedenti subsimilis, at minor, antice angustata etc. Ovata, convexa, polita, flavo-testacea, æneo-tincta, elytris flavo-testaceis, maculis utrinque duabus rotundis basalibus (altera prope scutellum altera humerali), fascia angulata mediana maculisque utrinque duabus apicalibus (altera marginali rotunda altera communi suturali antice cum fascia anguste conjuncta) fulvo-rufis; capite subtiliter coriaceo, parum punctulato, clypeo postice dilatato, antice subtruncato, margine parum elevato; thorace a basi ad apicem angustato, lateribus leviter arcuatis, basi immarginato, supra disperse punctulato; elytris punctato-striatis, stria 2ª versus basin confuse duplicata, 5ª et 8ª valde abbreviata et incompleta. Pygidium subtiliter subsparsim undulato-strigulosum, nitidum. Tibiæ anticæ unidentatæ (apicali), dente 2° superiore obsoleto; 4 posticæ minime suratæ. Pectus et coxæ posticæ grosse punctata, fere glabra. Mesosternum angustum, sed apice sat porrecto et antice compresso.

Long. 9 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

One example, probably a female, as the external claw of the anterior tarsi is long and

slender; the claw is cleft, and the upper tooth is long and moderately robust, though shorter than the lower. The corresponding claw of the middle tarsi is widely cleft.

In the colour and markings of the elytra the species somewhat resembles *Plagiodera æneiventris* (Biol. Centr.-Am., Coleopt. vi. 1, t. 10. f. 1).

58. **Anomala sulcans.** (Tab. XIII. fig. 5.)

Magna, elongato-ovata, nigra, nitida; antennis castaneo-rufis; clypeo subsemicirculari postice parum ampliato, margine reflexo, dense confluenter punctato, fronte et vertice disperse punctatis; thorace lateribus leviter arcuatis, margine basali medio interrupto, supra disperse punctulato; elytris sulcatis, sulcis in fundo punctulatis, 2° versus basin minus impresso et confuse punctato, interstitiis convexis; pygidio nitido, rugulis punctulatis parvis transversis, compresso. Tibiæ anticæ bidentatæ, 2 posticis suratis ad apicem minus constrictis. Mesosternum apice convexo-compressum, nitidum. ♀? Tarsi anteriores ungue exteriore profunde et late fisso sive furcato, dente superiore longiore.

Long. 20 millim. ♀?

Hab. Nicaragua, Chontales (*Janson*).

59. **Anomala —— ?**

Hab. Nicaragua, Chontales (*Janson*).

One example, agreeing with the preceding in almost every point except its smooth very finely striate-punctate elytra. The anterior tarsi are wanting. It is possibly the other sex of *A. sulcans*.

60. **Anomala rhodope.** (Tab. XIII. fig. 6.)

Breviter ovata, saturate viridi-ænea (subtus fere nigra), nitida, elytris rufis sutura æneo-tincta; capite dense confluenter punctato, vertice læviore, clypeo subsemicirculari, margine sat alte reflexo; thorace postice sat dilatato, disperse punctulato, margine basali integro; elytris utrinque sutura et costis tribus mediocriter convexis lævibus, striis dense transversim punctatis delimitatis, interstitiis planioribus striato-punctatis, subsuturali confuse pauciter confluenter punctato. Pygidium sparsim breviter strigulatum vel punctatum, nitidum. Tarsi anteriores articulo unguiculari subtus crasse dentato. Mesosternum inter coxas sat latum apice (juxta metasternum) tuberculiforme. ♂. Tarsi anteriores ungue majore brevi lato, dente superiore breviore.

Long. 12 millim. ♂ ♀.

Hab. Mexico, Silao (*Sallé*), Mexico city (*Flohr*, *Höge*), Oaxaca (*Höge*).

Much resembles the European *Phyllopertha horticola*, but it is of more compact ovate form. An example from Mexico city is figured.

61. **Anomala costaricæ.**

A. cinctæ (Say) proxime affinis; minor et elytris semper lucide flavo-testaceis etc. Suboblongo-ovata, viridi- vel cupreo-ænea, nitida, capite antice cuprascenti-rufo, elytris (sutura margineque angustissime fusco exceptis) lucide flavo-testaceis; subtus cum pedibus rufo-testacea metallica vel nigro-ænea; clypeo postice vix dilatato margine elevato, cum fronte densissime punctato, vertice fere lævi; thorace ante medium subangulatim dilatato, postice paullo dilatato, angulis posticis subrectis (paullo obtusis), margine basali medio interrupto vel subinterrupto, minus disperse punctato; elytris punctulato-striatis, stria humerali fere integra, interstitio subsuturali lato, parce confuse punctato; pygidio arcuatim striguloso nitido;

pectore fulvo-villoso. Tarsi antici articulo unguiculari subtus valide dentato. Tibiæ anticæ tridentatæ, dente superiore brevi et lato. Mesosternum inter coxas latum, apice (juxta metasternum) transversim paullulum tumidum. ♂. Tarsi antici ungue exteriore medio perparum dilatato, dente superiore haud abbreviato.

Long. 12–14 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Janson*, *Belt*); Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*).

Two examples only from Chontales, the rest of the numerous series being from Costa Rica.

62. **Anomala cincta.**

Anomala cincta, Say, Boston Journ. Nat. Hist. i. p. 181 (1835)[1]; Complete Writings, ii. p. 654; Burm. Handb. der Ent. iv. 1, p. 254.

Anomala latreillei, Blanch. Cat. Coll. Ent. i. p. 188 (sec. coll. Sallé) (excl. var.)[2].

? *Anomala fulgidicollis*, Blanch. loc. cit. p. 187[3].

Hab. Mexico[1 2 3], Cordova, Teapa (*Sallé*), Cuernavaca, Jalapa, Plan del Rio, Yautepec (*Höge*); Guatemala, Coban (*Champion*).

Say described, with his usual aptitude, what must be considered the typical form of this species, in which the elytra are pale tawny-testaceous with the suture (narrowly) and the outer margin (especially near the shoulders) blackish-brown. The dark brown colour in many examples is broadly suffused, and in extreme cases spreads over the whole surface of the elytra; it tends always to form vague vittæ, never fasciæ, hence I very much doubt if the variety described by Blanchard belongs to the same species as his *A. latreillei*, to which he refers it.

In some of the localities there occurs what seems to be a variety or varieties in which the elytra are deep black or bluish-black, metallic bluish-green or coppery, without trace of pale brown hues. This comes extremely near to *A. viridicollis*, Burm., from Colombia, if it be indeed specifically separable from it. All the examples have a small third tooth on the outer edge of the anterior tibiæ, in both sexes, a broad very sloping mesosternum thickened and broadly subtubercular at its apex, unicolorous metallic (very seldom rufous-translucent) thorax and under surface, and the hind margin of the thorax interrupted (*i. e.* the marginal stria) in the middle. In *A. cincta*, type, the elytra have punctured striæ, sometimes faintly, sometimes rather deeply, impressed with a broad second interstice having a moderate (but very variable) number of confused punctures, and little or no tendency to the formation of geminated striæ. The pygidium is glabrous and shining, and not densely sculptured, with short transverse striæ intermixed with punctures. The variety is as follows:—

Var. *A. polychalca*. Cæruleo- vel viridi-ænea (capite thoraceque interdum cupreis), polita, elytris variant nigris leviter metallicis, chalybeis, nigro-æneis et cupreis, capite interdum fulvo-rufo.

Long. 13–17 millim.

Hab. Mexico, Cordova, Jacale (*Sallé*), Cuernavaca (*Sallé*, *Höge*), Matamoros Izucar and Atlisco in Puebla, Jalapa, Oaxaca (*Höge*); British Honduras, R. Hondo (*Blancaneaux*); Guatemala, Purula (*Champion*).

Some examples of the variety diverge much from the type in colour and sculpture, and have the appearance of distinct species. Those with brassy-black elytra bear the name of var. *nigripennis*, Deyrolle (MS.), in the Sallé collection.

63. **Anomala forreri.** (Tab. XIII. fig. 7.)

A. cinctæ var. *polychalcæ* affinis et similis, sed differt tibiis anticis bidentatis pygidioque disperse transverso-punctato etc. Elongato-ovata, chalybeo-viridis, capite cuprascenti-rufo, elytris viridi-ænescenti-nigris sericeo-nitentibus, pedibus (plus minusve) antennisque castaneo-rufis; capite confluenter punctato, vertice lævi; thorace (a supra viso) postico dilatato, lateribus arcuatis, angulis posticis subrotundatis, sulculo marginali baseos sat exarato medio perparum interrupto vel integro, supra disperse punctulato; elytris punctato-striatis, striis inæqualiter impressis, interstitiis subsuturali et humerali limboque laterali confuse punctatis; pygidio convexo, polito, sparsim transverso-punctato. Tibiæ anticæ bidentatæ. Mesosternum sat latum, apice anguste tumido nitido. ♂. Tarsi antici ungue majore lato robusto denteque superiore valido, elongato.

Long. 15–16 millim. ♂ ♀.

Hab. Mexico, Presidio (*Forrer*).

Three examples.

64. **Anomala semicincta.**

Oblongo-ovata, ænea vel viridi-ænea, elytris obscurioribus, thorace lateribus elytrisque dimidio posteriore rufo-limbatis; subtus rufo-testacea æneo- vel aureo-nitens, tibiis tarsisque viridi-æneis rufo-maculatis; capite densissime scabroso-punctato, clypeo subsemicirculari; thorace longe ante medium dilatato deinde usque ad basin recto, angulis posticis subrectis, margine basali integro, supra minus disperse punctato; elytris punctato-striatis (punctis in foveolis transversis immersis) undique punctulatis, interstitio subsuturali lato confuse rugoso-punctato; pygidio sat dense confluenter punctato-ruguloso, æneo, interdum medio flavo. Tibiæ anticæ bidentatæ, posticis valde suratis. Mesosternum sat latum, apice paullulum porrectum, politum. ♀. Tarsi 4 antici ungue exteriore profunde fisso.

Long. 15 millim. ♀.

Hab. Mexico, Jalapa, Cordova (*Höge*).

Two female examples only.

65. **Anomala ——?**

Hab. Mexico, Cuernavaca (*Höge*).

One example of an apparently distinct species, defective in the four anterior tarsi.

66. **Anomala variolata.**

Ovata, postice interdum dilatata, nigra, polita, elytris plerumque vage fulvo-maculatis vel fulvo-bifasciatis vel toto fulvis, punctis semper nigris; capite densissime scabroso-punctato, vertice læviore, clypeo brevi et lato, vel valde transversim quadrato angulis rotundatis, margine acute elevato; antennis palpisque piceo-rufis; thorace (a supra visu) a basi ad apicem angustato, medio paullulum dilatato, angulis anticis acutis, posticis

fere rectis, sulculo marginali baseos excavato sed medio interrupto, supra disperse punctulato; elytris sat grosse punctatis et rugulosis, striis disci et suturali interdum paullo regularibus; pygidio polito, sat disperse punctato rugulis nonnullis longitudinalibus. Mesosternum mediocriter latum, apice paullo anguste prominens et tumidum. Tibiæ anticæ bidentatæ. ♂. Tarsi antici ungue majore elongato profunde fisso angulatim dilatato, dente superiore valido haud breviore.

Long. 13–14 millim. ♂ ♀.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

Many examples.

67. **Anomala ——?**

Hab. MEXICO, Peras (*Sallé*).

A single example, female, of a species similar to the above but evidently distinct. Another allied species, of which I have seen also only one example, occurs in Venezuela.

68. **Anomala cnethopyga.**

A. variolatæ similis, sed diversa, pygidio densissime sculpturato, opaco etc. Ovata, ænea, nitida, elytris nigro- vel fusco-æneis plus minusve fulvo-marmoratis; clypeo minus transverso, obtuse et late trapezoidali vel subsemicirculari, margine minimo reflexo, cum fronte densissime scabroso-punctato, vertice dispersius punctato; thorace postice ampliato paullo ante medium leviter dilatato, sat fortiter punctato, margine basali late interrupto; elytris passim sat grosse rugulosis et punctatis, costis plus minusve distinctis; pygidio minute intricato-granulato-strigoso, opaco. Mesosternum mediocre, inter coxas paullo tumidum, nitidum. Tibiæ anticæ bidentatæ. ♂. Tarsi antici ungue majore robusto medio dilatato, dente superiore vix breviore.

Long. 12–14 millim. ♂ ♀.

Hab. GUATEMALA, Dueñas, San Gerónimo (*Champion*).

Four examples.

69. **Anomala cupricollis.**

Anomala cupricollis, Chevr. Col. Mex. Cent. i. fasc. 4, no. 75[1]; Burm. Handb. der Ent. iv. 1, p. 263[2].

Hab. MEXICO[1 2], Cordova, Catemaco, Juquila, Oaxaca (*Sallé*), Jalapa (*Höge*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Cerro Zunil 4000 to 5000 feet, Las Mercedes, Coban, Panzos, Panima, Chacoj, Senahu (*Champion*); ? COSTA RICA (*Van Patten*).

Var. 1. Elytrorum puncta paullo majores et pauciores marginibusque (sicut sutura) anguste infuscatis.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

Var. 2, *A. coagulata.* Elytra undique maculis confluentibus fuscis. (Tab. XIII. fig. 8.)

Hab. NICARAGUA, Chontales (*Belt*).

This large and tolerably well-known species is distinguished from the nearly allied

forms by its large, especially broad, head. Our numerous series of examples show scarcely any difference in colours or markings from Mexico to Panama. The fore tibiæ are bidentate; the mesosternum is prominent and slightly porrect between the coxæ.

Var. 1 is of precisely the same form as the Mexican type, but Var. 2 is more robust, convex, and dilated behind, and may prove to be a distinct species.

It varies in size from 17 to 24 millim. The smallest are from Jalapa, the largest from Guatemala.

70. **Anomala valida.**

Anomala valida, Burm. Handb. der Ent. iv. 1, p. 264[1].
Anomala bimaculata, Blanch. Cat. Coll. Ent. i. p. 188 (sec. coll. Sallé)[2].

Hab. Mexico, Playa Vicente (*Sallé*), Jalapa (*Höge*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica, Volcan de Irazu (*Rogers*); Panama (*MacLeannan*).—South America[2], Colombia[1], Venezuela (*coll. Bates*).

In this species the punctures of the sutural stria (which is only impressed towards the apex) collect in oblong blue-black foveæ, similar to the geminated lines of foveæ on the disc of the elytra. In many examples there is a dusky spot exactly in the middle of each elytron.

71. **Anomala pupillata.**

Anomala pupillata, Burm. Handb. der Ent. iv. 1, p. 263[1].

Hab. Mexico, Cosamaloapam (*Sallé*); Guatemala[1], Panzos, Volcan de Atitlan, Paraiso (*Champion*).

I am not sure of the identification of this species, as none of our examples are so small as 6 lines (about 14 millim.), the size given by Burmeister. Our Guatemala specimens measure from 19 to 24 millim. In all other respects they agree with Burmeister's description. In the Sallé collection *A. pupillata* is identified with a spotted var. of *A. sticticoptera,* Blanch. In colour and markings the resemblance is complete, but the form of the mesosternum, "ein wenig vorgezogen," is quite different from that of *A. sticticoptera.* I doubt, however, whether *A. pupillata* is specifically different from *A. valida.*

72. **Anomala ——?**

Hab. Nicaragua, Chontales (*Belt*).

A single example of a doubtful species allied to *A. cupricollis.*

73. **Anomala megalia.** (Tab. XIII. fig. 9.)

Magna, elongato-ovata, toto fulvo-testacea, antice æneo-tincta, subtus fusco-ænea, nitida; clypeo lato sub-

quadrato, angulis rotundatis, margine oblique reflexo, toto capite dense punctato; thorace postice dilatato lateribus arcuatis, dense partim confluenter punctulato, margine basali viridi-æneo; elytris toto dense punctulatis, stria suturali versus apicem impressis punctulisque disci plus minusve seriatis; pygidio dense undulato-striguloso, opaco. Mesosternum latum, inter coxas tumidum vix porrectum. Tibiæ anticæ bidentatæ, 4 posticæ breves vix suratæ.

♀. Tarsi 4 anteriores ungue exteriore profunde fisso.

Long. 22–24 millim. ♀.

Hab. Honduras, Ruatan Island (*Gaumer*); Nicaragua, Greytown (*Belt*).

Four examples. A Ruatan specimen is figured.

74. **Anomala præcellens.** (Tab. XIII. fig. 10.)

Oblongo-ovata, valde convexa, lævis, resplendens, viridi-ænea, elytris melleo-flavis anguste æneo-marginatis, subtus nigro-ænea; capite lato, subtiliter disperse punctulato, clypeo dense ruguloso transversim quadrato, angulis rotundatis, margine elevato; thorace lateribus sat late arcuatis, antice angustato, basi flexuoso, sulculo basali late interrupto, supra subtilissime disperse punctulato; elytris subtiliter striato-punctulatis, nec stria suturali impressa, interstitiis subsuturali (lato) et humerali confuse multipunctulatis, margine laterali mox pone medium obsoleto; pygidium politum, subtiliter undulato-strigulosum. Mesosternum apice (inter coxas) breviter porrectum. Tibiæ anticæ bidentatæ, posticæ sat graciliter suratæ. ♀. Tarsi 4 antici ungue exteriore profunde fisso.

Long. 20 millim. ♀.

Hab. Nicaragua, Santo Domingo in Chontales (*Belt*).

Two examples.

75. **Anomala ——?**

Hab. Mexico, Guyaco (*Sturm, in coll. Sallé*).

One example of a doubtful species.

76. **Anomala plurisulcata.** (Tab. XIII. fig. 11.)

A. microcephalæ et *A. sulcipenni* affinis. Subelongato-ovata, toto nigro-cyanea, viridi-æneo-nigra, cuprea vel thorace viridi-æneo, elytris cupreis, polita, pectore griseo-villoso, antennis rufis; capite confluenter, vertice sparsim, punctato, clypeo subsemicirculari margine elevato; thorace medio subangulatim dilatato, sat fortiter subdisperse punctato, margine basali medio late interrupto; elytris sulcis octo in fundo dense transversim punctatis, sulco 2° prope basin abbreviato ibique confuse punctato, lateribus striis punctatis tribus; pygidio dense confluenter striguloso et punctato, glabro, subnitido. Mesosternum latum, apice tumido haud conico. Tibiæ anticæ bidentatæ (interdum dente tertio rudimentario), 4 posticæ suratæ. ♂. Tarsi antici ungue majore haud medio dilatato.

Long. 13–15 millim. ♂ ♀.

Hab. Guatemala, Zapote, Las Mercedes, Volcan de Atitlan, Cerro Zunil 4000 to 5000 feet (*Champion*).

Numerous examples. A Zapote specimen is figured.

3. *Mesosternum latum, apice conicum, porrectum. Elytra margine laterali in* ♀ *haud dilatato-incrassato.* (Spilota, *partim, Burm.*)

77. **Anomala granulipyga.** (Tab. XIII. fig. 12.)

Ovata, æneo- vel aureo-fusca (elytris sæpe fundo castaneis), splendens, subtus aureo-testacea, ænea vel cuprea, breviter griseo-pilosa, thorace limbo angusto laterali flavo; clypeo postice vix angustato, confluenter punctato, margine anteriore elevato, fronte verticeque discrete punctatis; thorace postice paullo ampliato, lateribus arcuatis, sat fortiter distanter punctato, basi immarginato; elytris punctulato-striatis, striis suturali et duabus utrinque prope callum apicalem exaratis, interstitio subsuturali late valde confuse subconfluenter multipunctato, interstitiis inter hoc et callum humeralem bis tribus (interstitio confuse punctato interjecto), limbo apicali confluenter punctato; pygidio dense acute recumbente granulato et cum propygidio griseo-setoso. Mesosternum inter coxas conice productum et tumidum. Tibiæ anticæ bidentatæ, 4 posticæ mediocriter suratis, sat brevibus. ♂. Tarsi antici ungue majore dilatato, dente superiore paullo longiore.

Long. 14–17 millim.

Hab. Guatemala, El Reposo (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Var. *A. chontalensis.* Thorax toto metallicus.

Hab. Nicaragua (*Sallé*), Chontales (*Belt, Janson*).

Closely allied to the North-American *A. marginata* (Fabr.), but differs in the sculpture of the elytra. This, although variable, in *A. granulipyga* always shows six interstices between the broad second interstice and the humeral callus, separated into two groups of three each by a confused line of punctures. Sometimes this division is not clearly perceptible, except behind towards the apical callus, and the broad second interstice also varies in its definition. A typical example from El Reposo is figured.

78. **Anomala vanpatteni.**

A. marginatæ (Fabr.) proxime affinis, paullo major et differt interstitio secundo lato, confuse multipunctato. Ovata, viridi-ænea, elytris sæpe fulvo-castaneo translucentibus, thorace vitta laterali flava; subtus æneo-testacea; thorace sat dense, versus latera subconfluenter, punctato, angulis posticis fere rectis, basi versus angulos marginato; elytris profunde punctato-striatis, interstitio 2° lato (postice angustiore) confluenter multipunctato, cæteris interstitiis convexis; pygidio dense subaspere punctato-ruguloso, griseo-setoso. Mesosternum inter coxas breviter prominulum, conicum.

Long. 14–17 millim. ♂ ♀.

Hab. Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*).

A large number of examples.

79. **Anomala marginicollis.** (*A. valdecostata*, Tab. XIII. fig. 13.)

Oblongo-ovata, viridi-ænea, capite antice limboque laterali thoracis fulvis, elytris castaneis æneo-tinctis, femoribus et tibiis partim flavo-testaceis; capite dense punctato, clypeo subsemicirculari margine sat alte reflexo; thorace post medium vix ampliato, lateribus arcuatis, angulis posticis valde obtusis, sat dense punctulato, basi immarginato; elytris densissime subrugulose punctulatis, utrinque costis duabus (interdum tribus) subconvexis, lævibus, striis crebre transversim punctatis delimitatis, interstitio subsuturali latissimo, æqualiter punctulato, interstitiis inter costas medio costulis angustis rudimentariis notatis; pygidio dense transversim punctato-strigoso, griseo-setoso. Mesosternum inter coxas paullulum productum.

Tibiæ anticæ bidentatæ, posticæ valde suratæ. ♂. Tarsi antici ungue majore lato, dente superiore valido nec breviore.

Long. 16–17 millim. ♂ ♀.

Hab. Mexico, Cordova, Santecomapan (*Sallé*), Misantla (*Höge*).

Five examples. I have adopted Chevrolat's MS. name of the species from the Sallé collection.

Var. *valdecostata.* Cupreo-ænea (elytris interdum obscure viridi-æneis), subtus cum femoribus flavo-testacea, ventro interdum infuscato; elytrorum costis quatuor convexioribus, striis profundioribus delimitatis, interspatiis omnibus æqualiter dense confluenter punctulatis.

Long. 18–20 millim. ♂ ♀.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

80. **Anomala nitescens.** (Tab. XIII. fig. 14.)

Sat late ovata, capite et thorace splendide viridi-æneis, hoc limbo laterali flavo clypeoque cupreo-fulvo, elytris rufo-fuscis ænescentibus, corpore subtus pedibusque flavo-testaceis; capite confluenter, vertice sparsim, punctatis, oculis vix convexis, clypeo lato, postice haud ampliato margineque parum reflexo; thorace (a supra visu) a basi ad apicem angustato, lateribus arcuatis, basi immarginato sed juxta scutellum paullo reflexo, dispersissime punctato; elytris profunde punctato-striatis (punctis confertis transversis), interstitiis angustis apud discum transversim rugulosis, stria 2ª duplicata postice solum impressa, striis lateralibus plus minusve confusis; pygidio viridi-æneo, subnitido, undulato-ruguloso, griseo-setoso. Mesosternum inter coxas crasse conicum, porrectum. Tibiæ anticæ bidentatæ, posticæ haud suratæ.

♂. Tarsi antici ungue majore versus basin angulatim dilatato, dente superiore haud breviore.

Long. 12–14 millim. ♂ ♀.

Hab. Mexico (*Sallé*).

I have adopted the MS. name given to this species by Deyrolle in the Sallé collection. The lateral margin of the elytra (in the female) is just perceptibly dilated and thickened in the middle.

81. **Anomala ——?**

Hab. Guatemala, Zapote (*Champion*).

A single example of a species much smaller than *A. nitescens*, similar in colour and sculpture, but widely different in some points of structure. Its position in the genus is uncertain.

82. **Anomala calonota.** (Tab. XIII. fig. 15.)

Elongato-ovata, viridi-pomacea, subænea, subtus splendide viridi-ænea rufo-translucens, thorace limbo laterali rufo; clypeo subsemicirculari, margine parum reflexo, dense scabroso-punctato, fronte discrete punctata; thorace a basi ad apicem gradatim angustato medio perparum dilatato, basi immarginato sed juxta scutellum paullo reflexo, toto disperse punctato; elytris punctato-striatis, striis 1ª et 3ª 4ªque versus apicem sulcatis, interstitiis subæqualibus, 2° latiore biseriatim subconfuse punctato excepto; pygidio discrete transverse punctato-ruguloso, piloso, nitido. Mesosternum sat elongatam, porrectum, acute conicum. Tibiæ anticæ juxta apicem bidentatæ, posticæ parum suratæ.

Long. 16–17 millim. ♀.

Hab. Panama, Bugaba (*Champion*).

Three examples. The lateral margin of the elytra is not dilated though gradually and slightly thickened towards the base, where the marginal stria is broader and more deeply impressed.

The species has somewhat the form, colour, and aspect of the green *Pyronotæ* of New Zealand.

4. *Mesosternum valde porrectum.* (Spilota, *partim*, *Burm.*)

83. **Anomala chlorotoides.**

Elongato-ovata, lævissima, capite punctato, thorace et elytris subtilissime vix perspicue punctulatis, his punctulis seriatis striaque suturali nulla postice rugulis transversis nonnullis notata; castanea, æneo-nitens, thorace saturatius viridi-æneo limbo lato laterali flavo, lateribus arcuatis, basi bisinuato immarginato; elytris abbreviatis, margine laterali post dimidium obsoleto, stria marginali versus humerum profunda ibique margine incrassato; pygidio fere plano, polito, sparsim transverse striguloso. Mesosternum longe porrectum, apice subrecurvo. Tibiæ anticæ apice extus prolongatæ, dente 2° parvo obtuso; posticæ vix suratæ, læves.

Long. 16 millim. ♀.

Hab. Costa Rica (*coll. Bates*).

One example. Bears some resemblance to a small *Chlorota* or *Antichira*.

84. **Anomala specularis.** (Tab. XIII. fig. 16.)

Elongato-ovata, resplendenti-viridi-ænea rufo-translucens, vertice thoraceque saturatius argenteo-viridibus, hoc limbo lato laterali flavo, elytris fulvis argenteo-nitentibus; clypeo lato, postice paullulum ampliato, antice parum arcuato, margine reflexo confluenter, fronte et vertice disperse, punctatis; thorace postice ampliato lateribus arcuatis, basi immarginato bisinuato, margine juxta scutellum paullo reflexo, supra dispersissime punctulato; elytris abbreviatis, margine laterali, usque prope apicem integro, versus humeros gradatim mediocriter incrassato ibique stria marginali latiore et profundiore, regulariter punctato-striatis, striis 1^{a}–4^{m} et 9^{a} 10^{a}que versus apicem profundioribus, stria 2^{a} versus basin haud impressa biseriatim punctulata; pygidio parum convexo, aspere transversim undulato-strigoso, griseo-setoso. Mesosternum longe porrectum, robustum. Tibiæ anticæ apice extus recte prolongatæ, dente 2° parvo propinquo; posticæ parum suratæ, læves. ♂. Tarsi antici ungue majore usque prope apicem lato, apice late furcato.

Long. 18 millim. ♂.

Hab. Costa Rica (*Van Patten*).

One example.

85. **Anomala chrysanthe.** (Tab. XIII. fig. 17.)

Magna, ovata, viridi-ænea resplendens, thorace limbo laterali pedibusque fulvo-rufo translucentibus; capite sat magno, oculis parvis, scabroso-punctato, vertice læviore, clypeo lato postice latiore, antice parum arcuato margineque reflexo; thorace paullo post medium leviter angulatim dilatato, angulis anticis acutis, basi bisinuato, immarginato, supra sat fortiter et minus disperse punctulato; elytris post medium latioribus, utrinque 4-costatis (2 exterioribus nullomodo convexis, minus distinctis), striis juxta costas versus apicem profunde impressis, interstitio 2° latissimo confuse, post medium (cum limbo apicali) grossius, scabroso-punctulato, interstitiis inter costas 1^{m}, 2^{m} et 3^{m} minus latis confuse punctatis, margine laterali usque prope apicem extenso, versus humerum gradatim incrassato ibique stria marginali lata et profunda; pygidio parum

convexo, aspere transversim undulato-strigoso, griseo-setoso. Mesosternum longe porrectum et attenuatum nec verticaliter crassum. Tibiæ anticæ normaliter bidentatæ, posticæ haud suratæ.
Long. 22 millim.

Hab. Costa Rica (*Sallé*); Panama, Volcan de Chiriqui (*Champion*).

Three examples. A Chiriqui specimen is figured.

86. **Anomala lepida.**

Anomala (*Spilota*) *lepida*, Burm. Handb. der Ent. iv. 1, p. 273[1].

Hab. Guatemala [1].

According to the description this species resembles in form our *A. calonota*, but it differs much in other respects.

87. **Anomala xiphostetha.**

Ovata, testaceo-fulva viridi-æneo relucens, capite, thorace (limbo lato laterali fulvo) et pectore saturatius viridi-æneis; capite scabroso-punctato vertice læviore, clypeo antice vix arcuato postice dilatato, margine reflexo; thorace a basi ad apicem angustato, lateribus arcuatis sat fortiter et æqualiter (lateribus crebrius confluenter) punctato, basi immarginato, bisinuato, juxta scutellum margine leviter reflexo; elytris striato-punctatis, disco rugulosis, costa unica distincta paullo convexa striis duabus impressis delimitata, interstitio 2° lato confuse punctato, margine laterali (♂) haud dilatato sed versus basin gradatim incrassato striaque marginali profunda; pygidio parum convexo, aspere punctato (vix striguloso), longe griseo-setoso. Mesosternum longe porrectum et attenuatum nec verticaliter crassum. Tibiæ anticæ bidentatæ, posticæ haud suratæ. ♂. Tarsi antici ungue majore fere usque ad apicem æqualiter lato, dente superiore paullo breviore.
Long. 13 millim. ♂.

Hab. Costa Rica (*Van Patten*).

Two examples, both males.

88. **Anomala phosphora.** (Tab. XIII. fig. 18, ♀.)

A. xiphostethæ simillima, differt tantum thorace lateribus rufo-translucente nec distincte vittatis elytrisque aliter sculpturatis, haud rugulosis, punctato-striatis, interstitiis plurimis convexis, 2° haud lato, sed stria 2ª biseriatim punctata postice sat profunde impressa limboque laterali striis punctatis quatuor profunde impressis; clare viridi-ænea fulvo-relucens, splendida. ♂ ♀. Elytra paullo ante medium leviter rotundato-dilatata, ibique margine (♂ minus ♀ magis) incrassato.
Long. 11–12 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*, *Trötsch*).

This and the preceding are apparently closely allied to *A. lewyi*, Blanch., from Colombia.

Seven examples.

5. *Mesosternum breviter porrectum, conicum. Elytra margine laterali (præcipue in ♀) ante medium dilatato-incrassato. Mesosterni epimera juxta humeros acute ascendentia.* (*Incl.* Pachystethus, *Blanch.*)

89. **Anomala micans.** (Tab. XIII. fig. 20.)

Anomala micans, Burm. Handb. der Ent. iv. 1, p. 269[1].

Hab. Mexico[1], Cordova, Toxpam, Yolotepec, Chiapas (*Sallé*), Jalapa, Chilpancingo, Cholula in Puebla (*Höge*), Oaxaca (*Sallé, Höge*).

The lateral margin of the elytra is dilated before the middle and wavy thence to the base like the other species of the section; but the dilated part is not so much thickened, even in the female. The mesosternal process is rather short, thick, and obtusely conical. The base of the thorax is immarginate, and the outer claw of the anterior tarsi broad and not gradually tapering to the apex.

In colour it varies from the green crown and thorax and green-tinged castaneous elytra, as described by Burmeister, to coppery or golden head and thorax and rich gold-tinged red or even violet-coloured elytra; and the pygidium, generally brassy-green, is sometimes clear yellow. The coppery examples are from Yolotepec and Oaxaca. The middle of the base of the thorax is often yellow as well as the sides; very rarely the thorax is entirely brassy-green.

90. **Anomala xantholea.**

A. micanti affinis; angustius ovalis, testaceo-fulva argenteo-viridi-tincta, vertice maculisque duabus thoracis discoidalibus viridi-æneis, elytris sæpe anguste nigro-marginatis; clypeo semicirculari, cum fronte confluenter, vertice discrete, punctato; thorace postice latiore, ante medium leviter dilatato, basi bisinuato, immarginato, sed interdum in sinubus tenuiter marginato, supra sat dense hic illic subconfluenter punctato; elytris sicut in *A. micanti*, striis 14 profundis crenatis interstitiis angustis, stria humerali supra callum humeralem dilatata, multipunctata, interstitioque 3° (a margine) antice et postice abbreviato; ab *A. micanti* differt striis 2ª et 3ª (a sutura) semper integris. Pygidium sat grosse transverse rugatulum sed politum, apice excepto glabrum; aut læte viridi-æneum, aut testaceum viridi-bimaculatum. Mesosternum sicut in *A. micanti* sed obtusius, vix conicum. Elytra margine laterali undulato, mediocriter dilatato et incrassato.

Long. 10–11 millim. ♂ ♀.

Hab. Mexico, Cordova (*Sallé, Höge*), Toxpam (*Sallé*).

Var. 1. Elytrorum striis minus acute impressis, elytris semper concoloribus.

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Var. 2. Latius subquadrato-ovata (♀).

Hab. Nicaragua, Chontales (*Belt*).

Fifteen examples.

91. **Anomala villosella.** (Tab. XIII. fig. 19.)

Phyllopertha villosella, Blanch. Cat. Coll. Ent. i. p. 179[1].

Hab. Mexico[1], Izucar (*Sallé*), Matamoros Izucar in Puebla, Iguala in Guerrero (*Höge*).

Evidently closely allied to *A. micans* and *A. xantholea*, notwithstanding the hairy clothing of the whole body, which is very dense and erect on the crown and thorax, and long, ashy-coloured and recumbent on the pygidium, denser still on the propygidium. The elytra have fourteen similarly punctured striæ with narrow interstices, but they are in some examples somewhat confused by transverse rugæ; the median dilatation, especially in the female, is well marked and explanated, but not much thickened. The chief difference from *A. micans* and others of the group lies in the thorax having a fine basal margin; this, however, is sometimes widely interrupted in the middle, and it does not then differ essentially from *A. xantholea*, in which the margin is often very distinct along the sinus on each side. The greater claw of the anterior tarsi of the male is especially wide nearly to the apex, where it has almost the appearance of being obliquely truncated, the upper tooth being very slender and somewhat shorter.

The general form is compact and ovate, and the legs and tarsi are robust; the species cannot therefore be referred to *Phyllopertha*.

92. **Anomala nitidula.**

Anomala nitidula, Blanch. Cat. Coll. Ent. i. p. 190[1].

Hab. Guatemala (*Morelet, Sallé*), Dueñas (*Salvin*), Escuintla, San Gerónimo, Quezaltenango 7800 feet (*Champion*); Honduras (*Sallé*); Costa Rica (*Van Patten*).

Blanchard says "thorace toto viridi;" but not one amongst the many examples I have examined is without at least a narrow, if somewhat ill-defined, yellowish lateral vitta. The base of the thorax is emarginate, except in some individuals, on the sides near the angle; the elytra have only thirteen punctured striæ, one of which (the eighth) is much abbreviated, and the lateral margin is dilated and thickened before the middle. The pygidium is convex, sometimes gibbous, posteriorly glossy metallic with a few long hairs. The mesosternum is prominent, briefly conical and laterally compressed. The colour above is apple-green with a metallic lustre, but sometimes (often the elytra only) testaceous with pale green lustre, and the thorax with two broad dark brassy-green vittæ. The locality given by Blanchard[1] is "Amer. Merid."

93. **Anomala nutans.** (Tab. XIII. fig. 21.)

Late ovata, fere sicut *A. vidua* supra glabra, toto nigra vel supra fulvo-castanea vertice thoraceque medio nigris, pedibus rufo-testaceis, raro supra toto pedibusque flavo-testaceis, interdum toto nigra, callis humerali et apicali rufis; capite toto confertim punctato, clypeo transversim quadrato, angulis rotundatis, margine sat alte reflexo; thorace a basi ad apicem angustato, paullo ante medium leviter obtuse dilatato, basi bisinuato immarginato, supra sat dense et grosse transversim subconfluenter punctato; elytris 11-sulcatis, sulcis

transversim punctatis, nonnullis apicem haud attingentibus, 2° interdum confuse punctato minus impresso, interstitiis convexis, margine flexuoso-dilatato, ♀ valde incrassato. Pygidium ♂ valde, ♀ parum convexum, transverse punctatum, glabrum. Mesosternum porrectum compresso-conicum. Tibiæ anticæ bidentatæ, posticæ paullo suratæ. ♂. Antennæ rufæ, clava valde elongata nigra; tarsi antici ungue majore robusto, dente superiore paullo breviore.

Long. 7–11 millim.

Hab. Mexico, Juquila (*Sallé*, *Höge*), Jalapa (*Höge*).

I have adopted the MS. name given to this distinct species in the Sallé collection.

94. **Anomala vidua.** (Tab. XIV. figg. 1, 2.)

Popillia vidua, Newman, Trans. Ent. Soc. Lond. iii. p. 48 (1841)[1].
Pachystethus viduus, Blanch. Cat. Coll. Ent. i. p. 201[2].
Anomala minuta, Burm. Handb. der Ent. iv. 1, p. 270 (nec Fabr.?).
Popillia sticticollis, Newm. l. c. p. 48[3].
Popillia semirufa, Newm. l. c. p. 49[4].

Hab. Mexico [1 3 4], Orizaba, Oaxaca (*Sallé*), Coatepec, Jalapa (*Höge*), Vera Cruz [2].

All the three colour-varieties, described as species by Newman, with apparently rare intermediate gradations, are found at Orizaba. In each variety, certainly in two of them, there are males and females, the colours are therefore not sexual as Burmeister described them.

We have received a large number of examples from Orizaba and also from Coatepec; two from the latter locality are figured.

II. *Tarsi anteriores unguibus haud apice fissis, dente superiore dorsali setiformi; intermedii unguibus dente parvo vel simplicibus. Tibiæ posticæ breves, subtriangulares.*

95. **Anomala rhizotrogoides.** (Tab. XIII. fig. 22.)

Anomala rhizotrogoides, Blanch. Cat. Coll. Ent. i. p. 186[1].

Hab. Mexico [1], Vera Cruz (*Sallé*, *Höge*).

This species differs from the typical *Anomalæ* in many points of structure; the ligula is narrowed and entire at its upper edge; the labrum is straight, and without the usual concavity in the middle, besides being extremely short, with the deflexed apex short and obtuse; the vertical edge of the semiovate concave clypeus is thickened and projects in front considerably beyond the mouth; and, lastly, the hind tibiæ are short, about two thirds the length of the tarsi, and dilated from base to apex. The antennal club (especially in the male) is very long, slender, and curved, the mesosternum rather narrow and declivous, the anterior tibiæ bidentate, and the mandibles and maxillæ short, robust, and dentated. The differences in labrum and tibiæ might justify the generic separation of *A. rhizotrogoides* if they were found to hold good in the few species

nearest allied to it; but one or other of them prove, as in other small groups of the genus, to be quickly modified.

Among the Old World *Anomalæ* the species seems nearest allied to the African *A.* (*Hoplopus*) *atriplex* and *A. vetula*.

Found in abundance by Herr Höge.

96. **Anomala** ——?

Hab. Mexico, San Blas (*Forrer*).

One defective example only. The hind tibiæ are three fourths the length of the tarsi; the clypeus and labrum are formed nearly the same as in *A. rhizotrogoides*.

97. **Anomala** ——?

Hab. Mexico, Guanajuato (*Sallé*).

One defective example of a very distinct species much smaller than the preceding.

98. **Anomala attenuata.** (Tab. XIII. fig. 25.)

Angusta, pallide testacea, thorace disco paullo obscuriore elytrisque vitta lata communi (sat vaga) suturali fusca; capite grosse sparsim punctato, clypeo angusto semiovato, grosse confluenter punctato, margine alte elevato; thorace parvo, usque ante medium paullo dilatato deinde usque ad basin paullo angustato, disco utrinque oblique impresso, punctis magnis sed parum impressis consperso, margine basali integro; elytris angustis, punctato-striatis, costa unica utrinque distincta convexa, interstitiis transversim rugosis, 2° haud lato, vage subuniseriatim punctato. Pygidium punctatum, longe erecte pilosum. Mesosternum angustissimum, coxæ contiguæ. Tibiæ anticæ apice extus prolongatæ, dente 2° obsoleto. Antennarum clava valde elongata. Tibiæ posticæ sicut in *A. rhizotrogoide* breves triangulares.

Long. 5–6½ millim.

Hab. Mexico, Vera Cruz (*Sallé*, *Höge*).

Three examples. On dissection the mouth-organs are found to be much less robust than in *A. rhizotrogoides*, the labrum is essentially similar, but smaller, and the mandibles are reduced to very thin, flat blades, closely applied to the roof of the mouth-cavity.

99. **Anomala castaniceps.** (Tab. XIII. fig. 23.)

Oblonga, convexa, castaneo-nigra, capite, pedibus et interdum thorace castaneo-rufis, politis, elytris parum nitidis; clypeo subsemicirculari interdum antice angustato, margine sat alte reflexo, confluenter punctato, fronte crebre, vertice sparsim, punctatis, punctis minutis intermixtis; thorace medio dilatato, postice haud ampliato, margine basali integro, supra disperse punctato; elytris subtilissime alutaceis sericeo-subopacis, striato-punctulatis, striis geminatis juxta costas solum paullo impressis, circa callum apicalem profundis, stria suturali a sutura distanti, interstitio 2° lato antice confuse punctato. Pygidium haud profunde punctatum, glabrum. Mesosternum valde angustatum. Tibiæ anticæ bidentatæ, posticis gracilibus elongatis paullo suratis.

Long. 11–14 millim. ♂ ♀.

Hab. Mexico, Jacale (*Sallé*), Las Vigas (*Höge*), Ciudad in Durango (*Höge*, *Forrer*).

The short setiform rudimentary tooth on the convex side of the external fore tarsal claw is sometimes absent. The hind tibiæ in this species are equal in length to the tarsi.

Named *A. erythrocephala*, Chevr., in the Sallé collection, a name which cannot be adopted, as it was used by Fabricius for a species of the genus.

A specimen from Jacale is figured.

100. **Anomala ——?**

Hab. Mexico (*Sallé, ex coll. Sturm*).

Closely allied to *A. castaniceps*, and perhaps only a well-marked local form of it, differing chiefly in colour. A single example.

III. *Ungues omnes simplices.*

101. **Anomala carinifrons.** (Tab. XIII. fig. 24.)

Oblongo-ovata, toto flavo-testacea, nitida; capite densissime punctato-scabroso, vertice læviore; clypeo deflexo, sat anguste quadrato, angulis anticis obtusis, margine alte reflexo, sutura frontali cariniformi; thorace brevi, paullo ante medium latiore, lateribus late arcuatis, margine basali integro, supra sat dense et fortiter punctato; elytris striis punctatis decem, quarum 1^{a}–7^{m} profundis et 3 lateralibus vix impressis; costis tribus paullo convexis, interstitio 2^{o} parum latiore, dimidio basali confuse sub-biseriatim punctato. Pygidium convexum, nitidum, parce punctatum. Mesosternum sat angustum, declive, planum. ♂. Tarsi antici ungue majore sat gracile, haud dilatato; antennarum clava valde elongata, articulis 2^{o}–6^{m} brevibus, 2^{o}–4^{m} subglobosis.

Long. 13 millim.

Hab. Mexico, Chihuahua city (*Höge*).

Evidently a close ally of *A. cavifrons*, Lec., of Texas and New Mexico, differing only in its larger size and strongly sculptured elytra. It is probably also found within the United-States boundary, as I have an example from Arizona sent by Morrison.

102. **Anomala ——?**

Hab. Mexico, San Andres Chalchicomula in Vera Cruz (*Höge*).

One mutilated example of a distinct species closely allied to the foregoing.

Species incertæ sedis.

103. **Anomala tessellatipennis.**

Anomala tessellatipennis, Blanch. Cat. Coll. Ent. i. p. 186[1].

Hab. Mexico[1].

104. **Anomala ——?**

Hab. Mexico, Playa Vicente (*Sallé*).

105. **Anomala** —— ?

Hab. Guatemala (*Sallé*).

A single imperfect example.

106. **Anomala** —— ?

Hab. Guatemala, Purula (*Champion*).

A single mutilated example, with the anterior tarsi broken off.

EPECTINASPIS.

Epectinaspis, Blanchard, Cat. Coll. Ent. i. p. 180 (1850); Lacordaire, Gen. Col. iii. p. 326 (1856).
Strigoderma (pars), Burmeister, Handb. der Ent. iv. 2, p. 515 (1844).

This genus, founded by Blanchard on a single Mexican species, is sufficiently distinguished from *Anomala* by its oblong form, convex thorax, and long quadrate clypeus, which, added to the deep and close striation of the elytra, give the species a distinct facies. There are, as usual in the subfamily, no very definite structural characters to distinguish the genus from *Anomala*, *Strigoderma*, or *Phyllopertha*. One of the principal is the long and robust, cheliform claw-joint of the anterior tarsi of the males. Of the characters derived from the parts of the mouth on which Blanchard in part founded the genus, that furnished by the labrum is the only one of importance. This he terms "obtectum," which is scarcely accurate, as the upper basal part is plainly visible, though forming only a narrow transverse piece; and it is distinguished from the same part in *Anomala* in being without trace of a central depression or emargination.

1. **Epectinaspis mexicana.** (Tab. XIV. fig. 3.)

Anomala (*Phyllopertha*) *mexicana,* Burm. Handb. der Ent. iv. 1, p. 241[1].
Strigoderma mexicana, Burm. Handb. der Ent. iv. 2, p. 515.

Hab. Mexico[1], Cordova, Orizaba (*Sallé*), Jalapa, Juquila (*Höge*).

Varies in size from 7 to 12 millim. The black variety mentioned by Burmeister appears to be rare, at least there are very few of it among the very large number of examples we have received. The lateral margin of the elytra, although slightly expanded before the middle, is scarcely at all thickened, even in the female.

A Cordova specimen is figured.

2. **Epectinaspis pictipennis.** (Tab. XIV. fig. 4.)

Quam *E. mexicana* paullo magis ovata, nigra, nitida, thorace elytrisque testaceo-fulvis, illo plaga dorsali ramosa variabili, his vitta utrinque obliqua plagaque postscutellari (interdum per suturam continuata) nigris; fronte confluenter punctata, clypeo ♂ quadrato-subporrecto (antice paullulum dilatato-rotundato), margine alte reflexo; thorace medio subangulatim dilatato, antice valde angustato, postice lateribus parallelis, angulis anticis valde acutis, posticis rectis, margine basali angusto integro, disco prope marginem declivi, passim

sat confertim punctato ; elytris punctulato-sulcatis, sulco 2° prope basin obsoleto confuse grosse punctato, interstitiis æqualiter convexis. Pygidium subtiliter punctulato-alutaceum, longe pilosum. Tibiæ anticæ bidentatæ, posticæ nullo modo suratæ, grossissime elongato-punctatæ. Mesosternum depressum. ♂. Tarsi antici ungue majore lato basi subito subtus angustato, dente superiore paullo breviore. Elytrorum margo lateralis mox post humerum explanato-dilatatus epipleuraque incrassata.

Long. 11–12 millim.

Hab. Mexico, Juquila (*Höge*). Four examples, all males.

Var. 1. Testaceo-rufa cupreo-tincta, capite obscuriore.

Hab. Guatemala (*Sallé*). One example, male.

Var.? 2, minor (8½ millim.). Caput et thorax cuprascenti-rufa, hoc confluenter vel rugoso-punctato, elytris nigris.

Hab. Guatemala (*Sallé*). One example.

3. **Epectinaspis opacicollis.** (Tab. XIV. fig. 5.)

Sat elongato-ovata, pallide flavo-testacea, capite viridi-æneo corporeque subtus nigro, thorace interdum macula anteriore triangulari fusca ; vertice, thorace et scutello dense erecte flavo-pilosis, elytris nitidis, scutello viridi-æneo, densissime scabriculoso ; capite densissime scabroso-punctato, clypeo quadrato, porrecto, antice paullulum dilatato-rotundato, margine reflexo ; thorace ante medium paullo obtuso dilatato, angulis anticis acutis, posticis rectis, supra densissime alutaceo-punctulato ; elytris sat valde punctato-striatis, striis 2ª et 8ª solum prope apicem integris, antice late dilatatis haud impressis, grosse confuse punctatis. Pygidium valde convexum, sat grosse alutaceum, griseo-hirsutum. Elytrorum margo (♂) haud perspicue dilatatus paullo incrassatus. Ungues antici sicut in *E. pictipenni*.

Long. 9–11 millim. ♂.

Hab. Mexico, Cuernavaca (*Sallé*, *Höge*).

Four examples, all males.

4. **Epectinaspis chelifera.** (Tab. XIV. fig. 6.)

Ovata, flavo-testacea, nitida, capite postice thoraceque antice medio (interdum disco toto) nigro-fuscis ; capite confertissime punctato, clypeo semicirculari, plano, margine angustissime reflexo ; thorace breviter setoso, lateribus late arcuatis antice angustato, angulis posticis obtusis, minus dense punctato, punctis minutis intermixtis, margine basali angusto integro ; elytris minus profunde punctato-striatis, sub callo humerali profunde oblique impressis, margine laterali ante basin valde flexuoso parum incrassato. Pygidium sat sparsim punctatum, longe pilosum, nitidum. Mesosternum valde depressum. Tibiæ anticæ bidentatæ, posticæ robustæ, nullo modo suratæ, punctatæ. ♂. Tarsi antici robusti, articulo unguiculari valido cheliformi, ungue majore elongato, prope basin angustato deinde obtuse dentato et lateraliter inflecto, dente superiore parum breviore. ♀? Toto nigra, thorace et pygidio glabris.

Long. 8–11 millim.

Hab. Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).

Six examples.

5. **Epectinaspis moreletiana.** (Tab. XIV. fig. 7.)

Phyllopertha moreletiana, Blanch. Cat. Coll. Ent. i. p. 179 [1].

Hab. Mexico, Tabasco (*Morelet* [1]) ; Guatemala, Dueñas, Zapote, Volcan de Atitlan (*Champion*), Chinautla 4100 feet (*Salvin*).

The head and thorax are black, opaque, the latter clothed with a very dense, erect, and soft light-coloured pile. The elytra are pale reddish-brown, subopaque; in one example only (captured by Mr. Salvin at Chinautla) are they variegated with black—a broad fascia behind the middle, and a second spot on each side near the tip of the scutellum. The scutellum is like the thorax opaque, black, and coarsely shagreened. The head, especially in the male, has the long, quadrate form and upturned edges of the typical species; and *E. moreletiana* is undoubtedly congeneric with *E. mexicana*.

As in many species of *Anomala*, of the *A. micans* group, the sharp ascendent edge of the mesosternal epimera rises in front of the shoulders of the elytra so as to be visible from above. This feature shows the close relationship of those forms with *Epectinaspis* and *Strigoderma*. An example from Dueñas is figured.

6. **Epectinaspis ambigens.**

Phylloperthæ horticolæ similis, sed thorace angustiore et antice gradatim attenuato; clypeo (♀) sat angusto et elongato-subquadrato, antice cum angulis rotundato margineque reflexo. Niger, capite thoraceque opacis, hoc dense erecte piloso, elytris castaneo-rufis; capite toto densissime confluenter punctato; thorace medio fortiter breviter dilatato, antice gradatim angustato, postice lateribus parallelis, dorso sicut in *E. mexicana* convexo et juxta basin subito declivi, margine basali integro, supra punctato-alutaceo; elytris grosse et subconfuse punctato-striatis, sub callo humerali profunde impressis, margine laterali (♀) vix ampliato nec incrassato; abdomine nigro-æneo, pygidio nitido, arcuatim striguloso, sparsim piloso. Mesosternum sat latum et depressum, sed apice (juxta metasternum) paullo tumidum. Tibiæ anticæ bidentatæ, posticæ haud suratæ, grossissime elongato-punctatæ. Mesosterni epimera paullo ascendentes et tumida nec acute marginata.

♀. Ungues exteriores 4 profunde fissi.

Long. 10 millim. ♀.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*). Two female examples.

The obtuse subascendent mesosternal epimera are unlike anything to be seen in other species of *Epectinaspis*, where, if visible at all, they appear in a sharp carinated edge as in many *Anomalæ*. The convexity of the hind part of the thorax and the form of the clypeus (which is no doubt more pronounced in the unknown male) show that the species belongs to *Epectinaspis*.

STRIGODERMA.

Strigoderma, Burmeister, Handb. der Ent. iv. 1, p. 310 (1844); id. ibid. iv. 2, p. 514 (1855); Lacordaire, Gen. Col. iii. p. 336 (1856).

A genus, so far as at present known, peculiar to America, and ranging far into the northern temperate zone, as well as throughout the intertropical region as far south as Tucuman. It is well represented in Mexico and Central America; and the numerous species we have to add to the genus show a far wider range of sculpture, as well as form, than was anticipated when the generic name was given. But, however diverse, they resemble each other much more than they do any of the varied forms of *Anomala*, and the tumid ascendent mesosternal epimera afford a good distinguishing character

in cases of doubt. In all the species the males may be distinguished from the opposite sex by the more attenuated abdomen, concave on its ventral surface, a difference which is very rarely observable in the *Anomalæ*.

I. *Striis elytrorum quinque inter suturam et callum humeralem.*

1. Strigoderma marginata.

Melolontha marginata, Olivier, Entom. i. no. 5, p. 70, t. 3. ff. 23 *a*, *b* (1789)[1].
Melolontha cincta, Fabr. Ent. Syst. i. 2, p. 175 (1792)[2].
Melolontha ridens, Fabr. Syst. Eleuth. ii. p. 178 (1801)[3].
Melolontha glabrata, Fabr. Syst. Eleuth. ii. p. 178[4].
Var. *Strigoderma pygmæa* (Fabr.) (partim), Burm. Handb. der Ent. iv. 1, p. 311.

Hab. Panama, Chiriqui (*Trötsch*), San Feliz, San Lorenzo (*Champion*).—South America[3 4], Amazons; West Indies, Guadaloupe[1 2].

A very few examples only were captured in the State of Panama—some of the typical colour as described by Olivier, and agreeing with specimens from the R. Amazons; one black with yellow elytral spots (the var. *glabrata*); and others all black. The species differs from its immediate allies of Central America in the thorax being sparingly and distantly punctured, and having only one or two rather small rounded foveæ on each side.

2. Strigoderma intermedia. (Tab. XIV. fig. 8.)

S. marginata differt solum thorace valde inæquali, foveis duabus utrinque sæpe confluentibus sulcisque vagis disci tribus, in impressionibus alutaceis partibusque elevatis discrete punctatis.
Long. 5–7 millim. ♂ ♀.

Hab. Mexico, Frontera in Tabasco (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala (*Sallé*), Cubulco, San Gerónimo, El Jicaro (*Champion*).

A large number of examples, nearly all coloured as in the typical *S. marginata*; a few examples only having in addition to the black elytral border a transverse median fascia of the same colour. The legs and sides of the thorax are sometimes testaceous-red. The thorax is glabrous.

A well-marked specimen from Frontera is figured.

3. Strigoderma mexicana.

Strigoderma mexicana, Blanch. Cat. Coll. Ent. i. p. 202[1].

Hab. Mexico[1], Orizaba, Playa Vicente (*Sallé*), Jalapa, Cordova, Tapachula in Chiapas (*Höge*).

Distinguished from *S. intermedia* chiefly by the pubescent thorax, the surface being sparsely clothed with erect hairs. In this it agrees with the following, *S. protea*, but differs in the very uneven surface of the thorax (resembling that of *S. intermedia*), the elevations of which are shining and coarsely punctured, not alutaceous-opaque. A

short, highly polished, elevated dorsal line or space near the base between the basal ends of the two broad oblique discal sulci, which never fails in the large series examined, also distinguishes the species. Blanchard's phrase "prothorace . . . . ruguloso . . . . lineola lævi notato," and the numerous examples labelled *S. mexicana*, Blanch., in the Sallé collection show that this is the species Blanchard had in view, and not *S. protea*.

4. Strigoderma protea.

Strigoderma pygmæa (Fabr.), var. *protea*, Burm. Handb. der Ent. iv. 1, p. 312[1].
Strigoderma nigrita, Blanch. Cat. Coll. Ent. i. p. 202[2].

Hab. Mexico[1], Vera Cruz[2], Puebla, Izucar (*Sallé*), Guadalajara, Colima city, Matamoros Izucar in Puebla (*Höge*).

The thorax is almost evenly convex, without foveæ or very distinct impressions, and is wholly alutaceous, opaque, and pubescent. In comparing the large series of this and the two preceding species the present appears to be generally of larger size and more diverse in the colours of the elytra, the state of the typical *S. marginata* being exceedingly uncommon. Rare examples occur which are partly intermediate, not only between this and *S. mexicana* but also between *S. intermedia* and *S. marginata*, and prove that they are all forms of one stock, barely segregated into species.

II. *Striis elytrorum sex inter suturam et callum humeralem.*

5. Strigoderma vestita.

Strigoderma vestita, Burm. Handb. der Ent. iv. 1, p. 314[1].

Hab. Mexico[1], Orizaba, Oaxaca (*Sallé*), Plan del Rio, Jalapa (*Höge*); Guatemala, near the city (*Salvin*), Sinanja (*Champion*); Costa Rica (*Sallé*, *Van Patten*).

Distinguished by the dense and strong subrugose punctuation of the thorax; the latter is without foveæ or depressions, narrow, and subangularly dilated in the middle, with porrect acute front and hind angles in the male, broader and less acutely angular in the female, its colour being variable—sometimes wholly dark greenish metallic, but more often tawny-red, like the elytra, with or without a green patch on its anterior part, the curiously declivous lateral margins being sometimes yellow, but not the basal margin. The under surface and pygidium and the apical margin of the propygidium are densely clothed with long recumbent tawny-ashy hairs. The mesosternum is subvertical, slightly tumid at the apex. The lateral margin of the elytra, in the female only, has an abruptly formed, much thickened and vertically arcuated, wheal.

In Guatemala examples occur with the elytra lineated with fuscous.

6. **Strigoderma sallæi.** (Tab. XIV. fig. 9.)

S. vestitæ affinissima, differt solum thorace semper æneo vel cupreo concolor et sicut pygidio et corpore subtus dense incumbenter cinereo-piloso.

Long. 7–8 millim. ♂ ♀.

Hab. Mexico, Cuernavaca (*Sallé, Höge*), Parada, Tepansacualco, Juquila, Capulalpam, Yolotepec (*Sallé*).

When the pubescence of the thorax is abraded it is difficult to distinguish this species from *S. vestita*. The sexual characters and sculpture are similar. The thorax in *S. sallæi*, however, is less elongated in both sexes, and the closely packed punctures are less confluent and confused; its colour also is always dark brassy-green or dull cupreous—there is no example in the tolerably large series examined tawny-red in front, which seems to be the most prevalent colour in *S. vestita*. A specimen from Juquila is figured.

7. **Strigoderma longicollis.** (Tab. XIV. fig. 10.)

Depressa, thorace angusto et elongato, supra glabra, fulvo-castanea, nitida, vertice, thorace vitta vaga mediana, scutello suturaque (interdum elytris totis) fusco-nigris; capite dense ruguloso-punctato; thorace ante medium subito dilatato, antice longe et gradatim angustato, postice valde sinuato, basi lato angulisque posticis exstantibus acutis, dorso utrinque inæquali sulcis vagis et latis obliquis impresso ibique grosse scabroso-punctato, medio dorso convexo, discrete punctato, basi valde flexuoso medio sublobato, carinaque obtusa laterali prope marginem a basi usque ad dilatationem ducta; elytris latis deplanatis utrinque post scutellum concavis calloque humerali valde elevato, sicut in *S. vestita* punctato-sulcatis, sulcis sex inter suturam et callum humeralem. Subtus et propygidii apex dense incumbente cinereo-pilosa, pygidio subglabro, aspere punctato, nitido. Mesosternum latum, subverticale, apice nullo modo porrectum.

Metasternum ♂ medio densissime erecte hirsutum.

Long. 9 millim.

Hab. Mexico, Orizaba (*Sallé*).

Three examples.

8. **Strigoderma contracta.** (Tab. XIV. fig. 11.)

S. longicolli affinis; multo minor. Breviter ovata antice angustata, parum convexa, nigro-ænea, elytris nigris, vel cuprascenti-castaneo-rufa, nitida; capite haud profunde confluenter punctato, clypeo transversim quadrato, angulis rotundatis, margine sat alte reflexo; thorace angusto, ante medium dilatato, antice longe et gradatim angustato, postice valde sinuato, angulis acutis, posticis exstantibus, supra toto basi tumore flexuoso margine basali fere parallelo et per latera continuato, margine antico utrinque incrassato discoque oblique impresso, toto disco disperse haud profunde punctato; elytris utrinque post scutellum concavis, profunde punctato-striatis, interstitiis 1°–8^{m} convexis, 9° angusto depresso. Pygidium confluenter haud dense strigulosum cum propygidio corporeque subtus cinereo-pubescens. Mesosternum subverticali apice tumidum sed haud porrectum. ♀. Elytrorum margo ante medium perparum arcuatus et incrassatus.

Long. 6–6½ millim.

Hab. Mexico, Tepansacualco (*Sallé*); Guatemala, Zapote (*Champion*).

Five examples. The single Guatemalan representative is a female, and differs from the others in the flexuous wheal across the base of the thorax and other inequalities

being a little less elevated, and in the pygidium and under surface of the body being more densely clothed with laid ashy hairs. We figure the individual from Zapote.

9. **Strigoderma physopleura.** (Tab. XIV. fig. 12.)

Parva, ovata, viridi-ænea, nitida, thorace anguste flavo-cincto, elytris rufo-testaceis, limbo toto (vel dimidio posteriore) interdum nigro; capite minus profunde confuse alveolato-punctato, clypeo quadrato margine alte elevato; thorace quadrato, angulis posticis minus exstantibus, ante medium mediocriter dilatato, cinctura elevata flava intramarginali integra, dorso grosse subdense rugoso-punctato absque foveis; elytris punctato-sulcatis; corpore subtus dense cinereo-hirto, pygidio fere nudo, polito, parce striguloso. Mesosternum latum, declive, apice haud prominente. ♂. Tarsi antici ungue majore valde elongato, mediocriter lato, dente superiore tenui, breviore. Elytrorum margo lateralis basin versus paullo incrassatus et verticaliter arcuatus. ♀. Elytrorum margo lateralis basin versus valde abrupte arcuatus et crassissimus.

Long. 6½ millim. ♂ ♀.

Hab. Mexico, Juquila (*Sallé*).

Five examples.

10. **Strigoderma castor.** (Tab. XIV. fig. 13, ♀.)

Popillia castor, Newman, Trans. Ent. Soc. Lond. iii. p. 49[1].

Popillia pollux, Newman, loc. cit. p. 50[2].

Hab. Mexico[1 2], Tuxtla, Playa Vicente, Panistlahuaca (*Sallé*), Cordova, Tapachula in Chiapas (*Höge*); Nicaragua, Chontales (*Belt*).

The type specimens of Newman's two species differ in sex, *S. castor* being a female and *S. pollux* a male, the latter consequently with a narrower thorax; they differ also considerably in the thoracic punctuation—in *S. castor* it is coarse and subconfluent with numerous irregular depressions on each side of the disc, besides the broad groove along great part of the inner side of the yellow submarginal wheal. The thoracic punctuation is, however, very variable in this species in both sexes: in the numerous series before me there are all gradations, and extremes go beyond the states of Newman's species; but the finest punctuation does not reach the nearly smooth thoracic surface of Burmeister's *S. orbicularis.* Rare examples occur, however, which partly connect these two apparently distinct species and even *S. castor* with *S. festiva.*

Independently of the thoracic punctuation, *S. castor* differs from the nearest allied species or subspecies in the shape of the clypeus, it being semioval or much narrowed and curved from the base to the rounded apex, with the margin very slightly raised. The yellow raised border is never absent from the thorax, the disc of which is generally brassy-green, but sometimes rufo-testaceous, and the oblique depressions on each side are seldom strongly marked. The thorax is dilated considerably before the middle, and the sides behind the angle are deeply sinuated to the hind angles, which are acute in the male and rectangular in the female. Viewed from above the thorax is elongate and narrowed in front in the male, but transverse-quadrate in the female. The elytra have the suture nearly always dusky, and sometimes also the humeral callus, apical

border, and disc; the depression on the anterior disc is slight and sometimes scarcely perceptible. The lateral margin is simple in both sexes.

In size *S. castor* varies from 6½–8 millim.

A female specimen from Panistlahuaca is figured.

The species is named *S. angulata*, Sturm, in the Sallé collection. I received it from Paris many years ago as *S. marginicollis*, Chevr., MS.

11. **Strigoderma festiva.**

S. castori proxime affinis; differt solum thorace transversim subquadrato vel subtrapezoidali margine alte reflexo thoraceque grosse punctato, tumore flexuoso submarginali basali altius elevato foveaque obliqua utrinque discoidali magis distincta. Color eadem sed variat toto chalybeo-nigro, pedibus rufis, thorace haud flavo-marginato.

Long. 6–7 millim. ♂ ♀.

Hab. Mexico, Juquila (*Sallé*), Jalapa? (*Höge*).

The locality "Jalapa" with which Herr Höge's specimens are labelled must be received with some reserve. I have adopted the name given to the species by Deyrolle in the Sallé collection.

12. **Strigoderma orbicularis.** (Tab. XIV. fig. 14.)

Strigoderma orbicularis, Burm. Handb. der Ent. iv. 2, p. 515 [1].

Hab. Mexico [1], Cordova (*Sallé*, *Höge*), Playa Vicente (*Sallé*).

Closely resembling *S. castor* in form and colours and differing only in the shorter and more semicircular clypeus, the evenly-convex smooth thorax, punctured conspicuously only near the sides, and in the sulci that limit the yellow submarginal wheal, the latter not raised in the middle of the fore and hind margins. The pygidium differs also in being less densely clothed with cinereous pile and contrasting with the rest of the uncovered portion of the abdomen by its brassy-black colour. The anterior disc of the elytra is much more strongly depressed.

13. **Strigoderma nigripennis.** (Tab. XIV. fig. 15.)

S. orbiculari differt solum colore viridi-æneo splendente, elytris nigris, pedibus rufis, capite et thorace corporeque subtus interdum rufis æneo-tinctis, thorace nunquam flavo-marginato.

Long. 6½–7 millim. ♂ ♀.

Hab. Mexico, Tepansacualco (*Sallé*), Cordova (*Höge*); Guatemala, Panzos in Vera Paz (*Champion*).

The description of *S. orbicularis* applies to this on every point except colour. The large number of examples of both, and the absence of all trace of connecting varieties, lead me to treat it as a distinct form.

A specimen from Panzos is figured.

14. **Strigoderma rutelina.** (Tab. XIV. fig. 16.)

Ovata, antice angustata, parum convexa, supra glabra, subtus parum dense pilosa, capite thoraceque viridi-æneis vel ænescenti-prasinis, hoc vitta laterali flava, elytris fulvo-testaceis, ♀ concoloribus, ♂ plaga quadrata circumscutellari, callo humerali vittaque irregulari marginali nigris; variat:—thorace margine vittaque mediano rufo-testaceis, vel toto corpore fulvo-testaceo thorace æneo-tincto; capite densissime punctato; clypeo transversim quadrato, angulis valde rotundatis margineque antico paullo reflexo; thorace elongato a basi ad apicem angustato, longe ante medium tantum leviter dilatato, angulis anticis acutis, posticis rectis, margine basali medio interrupto, supra (fovea rotunda laterali excepta) æqualiter convexo, punctis sat grossis et profundis (hic illic transversis) undique impresso; elytris profunde punctato-striatis, interstitiis æqualiter convexis. Pygidium aspere strigulosum, sparsim pilosum. Mesosternum breviter porrectum, conicum, crassum.

♂ ♀. Elytra margine versus basin paullo incrassato, haud dilatato.

Long. 6–9 millim. ♂ ♀.

Hab Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

A large number of examples. The black elytral markings of the male are strongly developed only in Costa Rican specimens—in some the apical half is black, as well as the scutellum and lateral patches; none of the males from Panama have more than the suture, continued along the sides of the scutellum, and a lateral vitta, dusky.

The species is allied to *S. colombica*, Burm. The elytral striæ are more deeply impressed than in *S. colombica*, but less so than in *S. castor* and its allies; and there is a further peculiarity in the occurrence of a rudimentary fourth stria between the suture and the humeral callus, which is distinct for some distance from the base between the fourth and fifth striæ and in some females extends nearly to the apex.

A Costa Rican specimen is shown on our Plate.

III. *Striis elytrorum septem inter suturam et callum humeralem.*

15. **Strigoderma teapensis.** (Tab. XIV. fig. 17.)

Ovata, testaceo-rufa, subtus viridi-ænea, fronte thoraceque viridi-æneis vel rufis æneo-tinctis, hoc vitta laterali flava intus fusco-marginata, elytris flavo-testaceis vitta laterali interdum nigra; capite creberrime (vertice sparsius) confluenter punctato, clypeo brevi lato, margine mediocriter reflexo; thorace ante medium rotundato-dilatato, angulis posticis valde obtusis, lateribus nullo modo sinuatis, dorso æqualiter convexo, fortiter (versus latera subconfluenter) punctato, linea dorsali lævi, basi integriter marginato; scutello fere lævi; elytris profunde æqualiter punctato-striatis, interstitiis parum convexis humerali latiore et confuse punctato, margine in ♀ recto simplice. Pygidium aspere arcuato-strigulosum, nitidum, parce hirsutum. Mesosternum subverticale, apice paullo tuberculiformi. Tibiæ postice breves, robustæ.

Long. 7½–8 millim.

Hab. Mexico, Teapa (*Höge*).

Three examples only of this very distinct species.

16. **Strigoderma tomentosa.** (Tab. XIV. fig. 18.)

Oblonga, supra subtiliter granulato-alutacea, fere opaca, fronte et thorace dense erecte pilosis; fulvo-testacea, æneo-nitens, fronte et macula triangulari apud thoracis marginem anticum obscure viridi-æneis, elytris interdum vel corpore toto æneo-schistaceis; capite toto confertissime confluenter punctato, clypeo

transverso subquadrato; thorace paullo ante medium dilatato, antice recte angustato, postice lateribus subparallelis, angulis posticis valde obtusis, margine basali subtili integro; elytris oblongis sulcatis, interstitiis angustis, potius undecim carinatis, carinis politis, sulcis opacis, margine laterali tenui, acuto, sub callo humerali (♂ ♀) tumidulo. Pygidium pilifero-punctulatum, politum. Mesosternum angustum, valde declive, subcarinatum. Tibiæ anticæ graciles bidentatæ, posticæ elongatæ haud suratæ. ♂. Tarsi antici ungue majore profunde fisso, dente superiore haud breviore, inferiore mediocriter dilatato.
Long. 7–10 millim. ♂ ♀.

Hab. Mexico, Juquila (*Sallé*).

Eight examples. A very distinct species, the somewhat tumid ascendent mesosternal epimera of which alone justify its being included in *Strigoderma*. The striæ, except on the sides where they are sunk in two broad furrows, are regular, and the humeral callus is feebly developed, as in *S. sulcipennis*.

17. **Strigoderma lampra.** (Tab. XIV. figg. 19, 20.)

Angusta, politissima, viridi-ænea, cupreo-aurea vel ænescenti-rufa, elytris chalybeo-nigris vel ænescenti-testaceis nigro-viridi marginatis; capite punctulato-scabroso, vertice lævi, clypeo brevi et lato subquadrato, margine mediocriter reflexo; thorace angusto ante medium mediocriter dilatato, angulis anticis productis, acutis, posticis valde rotundatis, basi sulculo marginali profundo integro, supra lævissimo utrinque foveis duabus rotundis profundis lævibus; elytris striis punctatis, suturali excepta parum impressis, inter callum humeralem et marginem lateralem tantum duabus. Pygidium convexum, læve. Mesosternum subverticale, apice tumidum paullulum porrectum. Tibiæ posticæ leviter suratæ. ♂. Tarsi antici ungue majore elongato, parum incrassato, dente superiore tenui, breviore.
Long. 7–8 millim. ♂ ♀.

Hab. Mexico, Tapachula in Chiapas (*Höge*).

About a score examples.

IV. *Striis elytrorum octo inter suturam et callum humeralem.*

18. **Strigoderma sulcipennis.**

Strigoderma sulcipennis, Burm. Handb. der Ent. iv. 1, p. 316[1].

Hab. Mexico[1], Ventanas (*Forrer*), Cordova, Puebla, Guanajuato (*Sallé*), Vera Cruz, Oaxaca (*Sallé*, *Höge*), Jalapa, Durango city, Guadalajara, Atlisco, Iguala, Misantla, Mexico city, Cuernavaca, Matamoros Izucar, Tapachula in Chiapas (*Höge*), Mochitlan in Guerrero (*Baron*); Guatemala (*Sallé*), near the city, Dueñas, Chacoj, Panzos, San Gerónimo, El Jicaro (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*).

Varies greatly in size (from 7–15 millim.) and in colour, the elytra being sometimes blackish and sometimes tawny-brown, and the thorax black or coppery-black, and unicolorous or the sides broadly bright red or yellow or rich golden, in rare examples (two from Guatemala) the whole surface gilded yellow. The punctuation and hairiness of the thorax also varies. None of these colour-variations appear to be local; most of them occur together in all localities whence we have received the species in numbers. A widely distributed and abundant insect in Mexico and Guatemala, but becoming rarer southwards.

V. *Elytra acute costulata.*

19. Strigoderma costulipennis. (Tab. XIV. fig. 21.)

Oblonga, subovata, supra deplanata, glabra, subopaca, ænescenti-nigra, elytris fulvo-testaceis plerumque sutura et lateribus nigro-vittatis; pedibus nigro-æneis vel rufis; capite creberrime confluenter punctato, clypeo parvo antice paullo angustato, margine leviter reflexo antice subsinuato; thorace ante medium rotundato-dilatato, postice gradatim angustato, basi valde flexuoso, subtiliter marginato, supra dense subtilissime punctulato; scutello dense punctulato, margine postico lævi; elytris interstitiis alternis (et suturali) anguste elevatis, nitidis, spatiis depressis opacis, seriepunctulatis, 1° et 2° versus basin breviter costulatis, costulis duabus lateralibus ante apicem conjunctis exteriore crassiore et flexuosa. Pygidium nitidum, discrete punctulatum. Mesosternum latissimum, convexum, declive, apice nullo modo prominens.

Long. 6–7 millim.

Hab. Mexico, Etla (*Sallé*), Chilpancingo in Guerrero, Juquila (*Höge*).

VI. *Elytra lævia.*

20. Strigoderma auriventris. (Tab. XIV. fig. 22.)

Elongata, oblonga, fere tota glabra, polita, capite, thorace et scutello cæruleis, elytris nigris, subtus viridi-aurea splendidissima, pedibus cyaneis, femoribus aureis vel rufo-aureis; capite confluenter punctulato, vertice lævi, clypeo brevi trapezoidali, angulis sat distinctis, margine reflexo antice medio minus reflexo subsinuato; thorace paullo ante medium dilatato, postice vix ampliato, angulis posticis subrectis, sulculo marginali basi medio late interrupto, supra lævi polito, vix perspicue sparsim punctulato utrinque foveis tribus lævibus partim confluentibus; elytris striis omnibus (marginali recta mox a callo humerali incipienti excepta) obsoletis, politissimis. Pygidium viridi-aureum, nitidissimum, punctulatum. Mesosternum latissimum, apice tumidum nec porrectum. Tibiæ postice elongatæ, basi angustatæ, suratæ.

Long. 14 millim. ♀.

Hab. Nicaragua, Chontales (*Janson*).

Two examples, females. This beautiful species differs but little in details of structure from *Strigoderma*, although the peculiar sculpture, or lack of sculpture, and the *Rutela*-like coloration seem to indicate a different generic type. The membranous border of the elytra is well-developed, and the antennæ are 9-jointed, though the fifth joint is much longer than any of the rest, and the mesosternal epimera are tumid at the sides and strongly ascendent. The most important differences are in the labrum, the visible basal part of which is longer than in the *Anomalæ* generally, and has no trace of median depression, but is straight and sharp-edged, and dips vertically in front with its lower (or anterior) edge not visible; and in the mentum, which is in the same plane as the ligula and longitudinally concave.

CALLIRHINUS.

Callirhinus, Blanchard, Cat. Coll. Ent. i. p. 176 (1844).
Anisoplia (partim), Burmeister, Handb. der Ent. iv. 2, p. 494 (1855).

This distinct genus consists only of one very variable species, apparently confined to Mexico.

1. **Callirhinus metallescens.** (Tab. XIV. figg. 23, 24.)

Callirhinus metallescens, Blanch. Cat. Coll. Ent. i. p. 177[1].
Anisoplia (*Callirhinus*) *metallescens*, Burm. Handb. der Ent. iv. 2, p. 494[2].

Var. 1. Elytris basi flavo- vel rufo-testaceis (*C. virescens*, Burm. l. c. p. 494).
Var. 2. Elytris toto flavo-testaceis.
Var. 3. Thorace metallico, vitta laterali flavo-testacea.
Var. 4. Thorace lateribus et ramo discoidali obliquo flavo-testaceis.
Var. 5. Supra toto rufo-testaceus, thorace æneo-tincto.

Hab. Mexico [1 2 3] (*Sallé, ex coll. Sturm*), Morelia in Michoacan, Tonila in Colima (*Höge*).

The numerous examples captured by Herr Höge vary from 9–10 millim. in length, the size given by Blanchard. Two of Sturm's measure 12 millim. The series examined exhibit nearly all gradations between the colour-varieties above described.

DILOPHOCHILA.

Corpus elongatum. Caput magnum, præcipue post oculos elongatum, latum; oculi parvi. Clypeus antice medio incisus, margine reflexo. Labrum bilobatum, porrectum, lobis ciliatis. Mentum medio dense pilosum. Antennæ 9-articulatæ, articulis 3° et 4° elongatis cylindricis. Tarsi antici (♂ ♀) ungue exteriore elongato subgracile, valde inæqualiter fisso, dente superiore brevi tenui dorsali; ungues intermedii simplices. Elytra margine postico membranaceo. Tibiæ anticæ bidentatæ.

The species constituting this genus much resembles, except in its narrow oblong form, the genus *Bolax*, from which the porrect, deeply divided labrum amply distinguishes it. The clypeus is large and subquadrate, with much rounded anterior angles, and separated from the forehead by a straight suture which is somewhat inconspicuous owing to the dense sculpture.

1. **Dilophochila bolacoides.** (Tab. XIV. fig. 25.)

Testaceo-rufa, fronte cum vertice thoraceque viridi- vel cupreo-æneis pilis longis obsitis, hoc margine toto lineaque dorsali rufo-testaceis, elytris fulvo-testaceis pallide lineatis; pectore fusco-æneo; capite toto creberrime confluenter punctato; thorace paullo ante medium angulato-dilatato, postice sinuato-angustato, angulis posticis subrectis, margine acuto basali integro, supra dense inæqualiter hic illic confluenter punctato; elytris punctato-striatis, striis partim confusis interstitiisque transversim rugulosis, 2 vel 3 discoidalibus plus minusve costiformibus. ♂. Ungues valde elongati. ♀. Elytra margine laterali medio incrassato et verticaliter longe arcuato.
Long. 8–11 millim. ♂ ♀.

Hab. Mexico, Parada (*Sallé*), Las Vigas (*Höge*).

Six examples.

Subfam. *RUTELINÆ.*

This subfamily corresponds to the "Sous-Tribu Rutélides vraies" of Lacordaire, with the exception of the genera *Macropoides* and *Heterosternus*, and the greater part of his Groupe "Aréodides." It excludes, therefore, those genera in which the head is furnished with a frontal suture. The front edge of the labrum is deflexed in the middle and in most cases closely folded under.

Group ANTICHIRINA.

PLATYRUTELA.

Corpus latissime ovatum, convexum. Clypeus brevis, latus, quadrangularis, sulcato-marginatus, margine antice sicut in gen. *Telauge* retrorsum declivis. Antennæ 10-articulatæ. Labrum medio basi valde concaviter depressum, apice deflexum; mentum convexum, ligula leviter depressa, margine late sinuato. Mandibulæ extus rotundatæ, inermes, infra apicem intus dente valido instructæ. Thorax lobo lato basali immarginato apiceque leviter sinuato, basi utrinque usque ad angulum leviter sinuato ibique subtiliter marginato. Scutellum mediocre, scutiforme. Elytra grosse sculpturata, tenuiter marginata. Pedes sat graciles. Tibiæ anticæ acute bidentatæ; ungues graciles paullo inæquales, omnes simplices (♀?). Mesosternum valde productum, subrectum.

The insect on which this genus is founded has the appearance of a broad *Anomala* or *Euchlora*, and the labrum is that of an *Anomala*; but the total absence of membranous margin to the elytra, the frontal suture, and the 10-jointed antennæ, remove it from the subfamily to which *Anomala* belongs. Its place is evidently near *Telaugis*, though the form of body and sculpture of the elytra give it an appearance totally unlike that genus.

The base of the thorax has a similar widely-interrupted margin, and the anterior vertical face of the clypeus slopes backward and forms a fold (highest in the middle) in front of the head. But the fold is not so horizontal as in *Telaugis*, and is separated from the surface proper of the clypeus by a deep and broad groove which surrounds the three sides of the clypeus.

1. **Platyrutela cribrata.** (Tab. XV. fig. 1.)

Obscure olivaceo-viridis, elytris fuscescentibus, subtus cum femoribus viridi-æneis, ventris segmentis postice cupreo-auratis, tibiis et tarsis piceis vel rufis, pectore et ventre utrinque longe griseo-pilosis; capite et thorace dense punctulatis, punctis majoribus et minoribus intermixtis, hoc lateribus arcuatis, angulis posticis rotundatis; scutello lævi; elytris grosse et profunde striato-punctatis, punctis dorsalibus in seriebus undecim ordinatis, sed 2ª, 7ª, 8ª et 9ª plus minusve confusis. Pygidium granuloso-rugulosum, viridi-æneum, nitidum.

Long. 22 millim. ♀?

Hab. Costa Rica (*Rogers*).

Two examples only, judging from the simple claws most probably females.

LAGOCHILE.

Lagochile, Hoffmansegg, in Wiedem. Zool. Mag. i. 1, p. 14 (1817); Lacordaire, Gen. Col. iii. p. 343; Blanchard, Cat. Coll. Ent. i. p. 204.

Chasmodia, MacLeay, Horæ Ent. i. p. 155 (1819); Burmeister, Handb. der Ent. iv. 1, p. 377.

Ometis, Latreille, in Cuvier's Règne Anim. iv. p. 554 (1829); Lacordaire, Gen. Col. iii. p. 344.

The sole character on which the genus *Ometis* is founded lies in the ascendent mesothoracic epimera. This is nearly as well marked in the typical species of *Lagochile* (*L. trigona*) as in the type of *Ometis*; the name, therefore, if the genus is to be considered valid, becomes a synonym of *Lagochile*, and the majority of the species hitherto

ranged under the latter would in that case require a new generic name. The ascendent mesothoracic epimera, however, are evidently not of generic significance, as they exist in many *Antichiræ*, and the character is not corroborated by any other peculiar feature.

Lagochile is peculiar to Tropical America. Up to the present time eleven species have been described.

1. **Lagochile circumdata.** (Tab. XV. fig. 2.)

Quoad colores *L. trigonæ* (Fabr.) similis, sed differt corpore longiore oblongo elytrisque deplanatis. Supra nigra, polita, thorace (antice medio excepto), scutello elytrisque basi rufo-fulvo marginatis; subtus corpore toto, partibus oris pedibusque rufo-fulvis, partim interdum leviter infuscatis; capite sparse et subtilissime punctulato, clypei lobis acutis et late foveatis; thorace brevi et lato, lævi, longe post medium dilatato, deinde antice valde angustato, postice cum angulis rotundato, sulculo marginali apud dilatationem abbreviato, basi juxta scutellum fere recto et extus utrinque sat profunde sinuato-depresso; elytris lævibus, pectore fulvo-hirto. Pygidium medio planatum, fere læve. Processus sternalis antice paullulum deflexus, sed apice acuto parum curvato. Mesosterni epimera haud ascendentia. ♂. Tarsi 2 antici ungue majore fisso, 4 posteriores simplices. ♀. Ungues omnes simplices.

Long. 18–21 millim. ♂ ♀.

Hab. Panama, Chiriqui (*Trötsch*), Bugaba, Volcan de Chiriqui (*Champion*).

Ten examples, all conformable to the above description.

The reddish-tawny basal margin of the elytra always extends beyond the shoulder, and a little way down the lateral edge of the elytra; the latter are nearly destitute of sculpture throughout.

2. **Lagochile collaris.**

Lagochile collaris, Blanch. Cat. Coll. Ent. i. p. 204[1].

Hab. Mexico[1], Cordova, Santecomapan (*Sallé*), Misantla (*Höge*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica, Cache (*Rogers*).

In form and sculpture agrees exactly with *L. circumdata*, from which it differs constantly in colour and markings, the elytra and underside being wholly tawny-red, and the head and thorax black, with the entire margin of the latter (sometimes interrupted near the head), a dorsal line extending from the labrum to the middle of the thorax, and the scutellum (or its borders only) tawny-red. The mesosternal process is formed as described under *L. circumdata*, but the elytra are perceptibly more convex.

3. **Lagochile chiriquina.** (Tab. XV. fig. 3.)

L. collari proxime affinis, paullo minor, et differt labro corporeque subtus nigro-fuscis, capite et thorace absque linea fulva dorsali elytrisque versus humeros vage infuscatis; pectore fulvo-piloso; cæteris sicut in *L. collari* et *L. circumdata*.

Long. 21 millim. ♂ ♀.

Hab. Panama (*coll. Bates*), Chiriqui (*Trötsch*), Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Seven examples.

4. Lagochile brunnipes.

Cetonia brunnipes, Olivier, Ent. i. no. 6, p. 77, t. 6. fig. 50.
Chasmodia brunnipes, Burm. Handb. der Ent. iv. 1, p. 342 [1].
Chasmodia marginicollis, Castelnau, Hist. Nat. Ins. ii. p. 118 [2].
Ometis brunnipes, Lacordaire, Gen. Col. iii. p. 344, nota.

Hab. Nicaragua, Chontales (*Belt*).—South America, Surinam, Cayenne [1 2], Amazons (*coll. Bates*).

Burmeister gives a description of this species, which is very good, except as to the emphasized convexity. In the numerous examples I have examined the elytra, though varying considerably, show at most but little convexity of surface. Among the peculiarities of the species is the continuity of the marginal groove of the thorax, which extends at least to the hind angle, and sometimes passes it and runs for a short distance along the basal margin.

CALOMACRASPIS.

Macraspis, § 1, Burmeister, Handb. der Ent. iv. 1, p. 345 (1844).
Antichira, Div. 1, Blanchard, Cat. Coll. Ent. i. p. 204.

The first division of *Antichira* seems to me to offer sufficiently well-marked and numerous structural characters to merit generic distinction. It differs from *Antichira* proper in the following points:—mandibles with the exterior edge rounded, unarmed; clypeus small, and, in the species where it is not concealed by the close sculpture, separated from the forehead by a fine, though broadly interrupted, suture; labrum porrect, horizontal; thorax with a large acute-angular basal lobe (the angles sharply indenting the base of the elytra), and the basal margin on each side very deeply sinuated to the acute and produced hind angle; and tarsal claws in both sexes simple.

Four species are known, from Tropical America, perfectly concordant in the above characters *.

1. Calomacraspis splendens. (Tab. XV. figg. 4; 5, *var.*)

Macraspis splendens, Burm. Handb. der Ent. iv. 1, p. 345 [1].

Hab. Mexico [1], Cordova, Orizaba, Parada, Vera Cruz, Chiapas (*Sallé*), Jalapa, Matamoros Izucar (*Höge*), Alamos (*Buchan-Hepburn*).

* One of them is as yet undescribed:—

Calomacraspis nigripennis.

C. haroldi (Candèze) affinis. Læte pomaceo-viridis, subtus metallica, tarsis cupreo-auratis, elytris purpurascenti-nigris; clypeo brevissimo arcuato confertim punctato, margine cupreo, sutura frontali medio interrupta fortiter impressa, fronte crebre punctata; thorace disperse, postice subtilius et sparsius, punctato, lobo basali apice valde arcuato; scutello latissime triangulari, lævi; elytris striato-punctatis, interstitiis alternis latissimis punctulatis; pygidio punctulato, subruguloso; processu mesosterni paullo descendenti et curvato, verticaliter crasso, apice haud incrassato.

Long. 18 millim. ♀.

Hab. Upper Amazons, Ega.

Apparently an abundant insect in the Province of Vera Cruz. The great majority of the examples are, as Burmeister describes the species, bright metallic green, but individuals occur of a rich reddish-golden hue, with the elytra, as usual, less glittering and golden-green, and others are intermediate between these and the typical state.

2. **Calomacraspis concinna.** (Tab. XV. fig. 6.)

Antichira concinna, Blanch. Cat. Coll. Ent. i. p. 204 [1].

Hab. Mexico [1], Cuernavaca (*Sallé*), Chilpancingo and Iguala in Guerrero, Colima city (*Höge*).

In addition to the colour-variations mentioned by Blanchard, the following may be noticed: vermilion with a golden tinge, and head and thorax dark olive-green with elytra vermilion and golden-red round the edges. A specimen from Cuernavaca is figured.

3. **Calomacraspis haroldi.** (Tab. XV. fig. 7.)

Antichira haroldi, Candèze, Harold's Coleopt. Hefte, v. p. 43 [1].

Hab. Guatemala, Sinanja (*Champion*); Nicaragua [1], Chontales (*Belt, Janson*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

We figure an example from Nicaragua.

ANTICHIRA.

Antichira, Eschscholtz, Mém. Acad. St. Pétersb. vi. p. 475 (1818); Lacordaire, Gen. Col. iii. p. 345; Blanchard, Cat. Coll. Ent. i. p. 204.

Macraspis, MacLeay, Horæ Entom. i. p. 156 (1819); Burmeister, Handb. der Ent. iv. 1, p. 343 (1844).

About 80 species of this beautiful and highly characteristic Tropical American genus have been described. Its limits have been left in much uncertainty by authors who have dealt with it; the grouping of its forms and those belonging to allied genera leading to different results according as the general facies, the size of the scutellum, or the dentition of the tarsal claws are taken as the chief points of distinction; and the graduation from form to form greatly increases the difficulty. I propose here to limit the genus to those species which have exteriorly bidentate mandibles, a more or less large triangular scutellum, the thorax with truncated or sinuated medio-basal lobe, and the mesosternal process well-developed. The mode of dentition of the tarsal claws is treated as a specific or at most a minor group character.

1. **Antichira lucida.**

Cetonia lucida, Oliv. Ent. i. no. 6, p. 75, t. 7. f. 64 [1].

Macraspis lucida, Burm. Handb. der Ent. iv. 1, p. 349 [2].

Hab. Mexico, Cordova, Tuxtla, Santecomapan, Chiapas (*Sallé*), Plan del Rio, Jalapa

(*Höge*); British Honduras, R. Hondo, R. Sarstoon (*Blancaneaux*); Guatemala, San Juan in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten, Rogers*); Panama, Chiriqui (*Ribbe, Trötsch*), Volcan de Chiriqui, Tolé (*Champion*).—South America, Colombia [2], Venezuela; West Indies, Guadaloupe [1].

2. **Antichira aterrima.**

Antichira aterrima, Waterhouse, Trans. Ent. Soc. Lond. 1881, p. 538 [1].

Hab. Mexico [1] (*Sallé, ex coll. Sturm*), Ventanas in Durango (*Höge*); Guatemala, Zapote, San Isidro (*Champion*).

The majority of our examples are distinguished from the *A. tetradactyla* (Linn.), from Jamaica, by their narrower form, the thorax also being narrowed slightly from the base forward, and the scutellum decidedly narrower. But rare individuals occur which are scarcely distinguishable from Jamaica specimens in these respects. All, however, have the pygidium finely strigose and punctulate throughout, whilst in *A. tetradactyla* this segment is smooth on the basal half. Most Mexican examples have a fine submarginal stria along the hind margin of the thorax on each side, of which there is no trace in those from Guatemala. The whole insect is deep polished black. The closely allied *A. tristis* (Casteln.) from Guadaloupe and St. Martin is distinguished by the numerous smooth sulci of the elytra.

Sometimes found in numbers flying in the hot sun about the anona and other fruit trees (*Champion*).

3. **Antichira hirtiventris.** (Tab. XV. fig. 10.)

A. lucidæ quoad formam similis, sed differt mesosterni processu paullo dependenti vix clavato, colore minus læte viridi-æneo corporeque subtus toto (ventro sparsius) griseo-piloso. Sat anguste oblonga, supra polita fere toto lævis; clypeo quam in *A. lucida* breviore et latius rotundato (fere truncato), margine reflexo; thorace a medio usque ad apicem recte angustato, basi multo minus quam in *A. lucida* flexuoso, juxta scutellum utrinque haud anguste sinuato, sed lobo mediano arcuatim emarginato; pygidio lævissimo, marginibus punctulato-strigosis, pilosis.

Long. 22–25 millim. ♂ ♀.

Hab. Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

A large number of examples were captured by Mr. Champion. The brighter green individuals approach *A. lucida* in colour, but the majority are very dark, almost brassy-black. In addition to the points of distinction mentioned above, it may be noted that the conical apex of the pygidium in the male is much less elongated than in *A. lucida.* In the hairy underside the species approaches the Venezuelan *A. pubiventris* (Blanch.); but the latter is very densely clothed beneath and on the legs and pygidium with long tawny hairs, and the upper surface is rather thickly punctulated.

4. **Antichira rufonitida.** (Tab. XV. fig. 9.)

Macraspis rufonitida, Burm. Handb. der Ent. iv. 1, p. 357 [1].

Hab. Mexico [1], Orizaba, Cuernavaca, Tepansacualco, Juquila (*Sallé*), Jalapa, Ventanas in Durango (*Höge*); Guatemala, San Gerónimo, Sabo in Vera Paz (*Champion*).

The reddish-brown translucent examples which have given the name to the species are apparently not the common form, the prevailing colours being rich brassy-green, blue-green, and dark blue. The under surface is more or less hairy, but the strongly inclined and clavate mesosternal process distinguishes the species from *A. hirtiventris*. It varies in size from 18–22 millim.

A specimen from San Gerónimo is figured.

5. **Antichira catomelæna.** (Tab. XV. fig. 8.)

Antichira catomelæna, Dohrn, Stett. ent. Zeit. 1885, p. 79 [1].

Hab. Panama, Chiriqui [1] (*Trötsch*).

Glossy black, the elytra each with two vittæ, and the lateral third of the thorax (enclosing an elongate black spot) orange-yellow. The mesosternal process is horizontal, upturned at the apex. The medio-basal lobe of the thorax is almost imperceptibly produced and very wide and slightly arcuate-sinuate.

6. **Antichira chlorophana.**

Macraspis (§ *Dorystethus*) *chlorophana*, Burm. Handb. der Ent. iv. 1, p. 358 [1].

Hab. Nicaragua, Chontales (*Belt*); Panama, Chiriqui (*Trötsch*).—South America, Brazil [1].

Three examples, agreeing very closely with others from Brazil.

7. **Antichira iodiella.** (Tab. XV. fig. 11.)

A. calcaratæ (Spinola) quoad formam et scutellum similis; multo minor, modice convexa, cæruleo- vel violaceo-nigra (capite thoraceque interdum obscure viridi-æneis), polita, supra (clypeo excepto) lævissima; clypeo mediocre ♂ ♀ semicirculari; thorace a basi usque ad apicem arcuatim (imprimis lente deinde citius) angustato, angulis posticis obtusis, lobo medio basali vix perspicue sinuato fere recto, margine basali utrinque late sinuato et depresso, sulco laterali profundo usque ultra angulum posticum continuato; elytris absque sculptura, pone humeros oblique retusis, margine laterali versus humeros incrassato deinde usque ad apicem serrulato. Pygidium ♂ ♀ usque ad apicem fere planum, medio læve, limbo strigoso. Femora postica ♂ inermia; mesosterni processus plus minusve inclinatus, apice recurvo acuto.

Long. 16–18 millim. ♂ ♀.

Hab. Panama (*Trötsch*), Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Five examples.

PTENOMELA.

Corpus ovatum, convexum, pomaceo-viride raro submetallicum. Mandibulæ extus rotundatæ, inermes. Clypeus (præcipue ♀) sat elongatus, semiovatus. Thorax margine postico medio breviter lobato recte truncato vel leviter sinuato, inter lobum et angulum posticum biflexuoso. Scutellum sat magnum, triangulare, lateribus flexuosis. Tarsi sicut in *Antichira*, ungue majore ♂ ♀ furcato. Mesosterni processus elongatus.

This genus is founded to include a considerable number of species, homogeneous in facies as well as in structural characters, which differ constantly from *Antichira* in the form of the mandibles, from *Thyridium* in the size and shape of the scutellum (which is one fourth the length of the elytra and triangular with flexuous sides), and from *Chlorota* (*sensu* Lacordaire) in the well-developed mesosternal process. In the truncated basal lobe of the thorax, also, it differs from the two latter genera, which are well characterized by the same part being somewhat strongly rounded over the base of the scutellum.

1. **Ptenomela gratiosa.** (Tab. XV. fig. 12.)

Antichira gratiosa, Sharp, Journ. Linn. Soc., Zool. xiii. p. 183 [1].

Hab. Nicaragua, Chontales (*Belt* [1], *Janson*); Panama, Chiriqui (*Trötsch*), Bugaba (*Champion*).

Chiriqui specimens are wholly apple-green, and lack the reddish or coppery colour of the elytral epipleuræ which Sharp describes, and which all the Nicaraguan examples possess. One of the latter is figured.

THYRIDIUM.

Thyridium, Burmeister, Handb. der Ent. iv. 1, p. 367 (1844), and iv. 2, p. 519; Waterhouse, Trans. Ent. Soc. Lond. 1881, p. 545.

Fourteen species of this genus have been described, all restricted to Tropical America. Its distinguishing characters are :—mandibles rounded (or very slightly sinuated) and unarmed on their outer edge, thorax with rounded medio-basal lobe, and the scutellum small and heart-shaped, or with curvilinear sides.

1. **Thyridium semicinctum.** (Tab. XV. fig. 13.)

Elongato-ovatum, pomaceo-viride, elytris basi et marginis exteriore dimidio aurantiaco-marginatis, supra toto subtiliter strigulosum et punctulatum, pygidio grossius et transversius striguloso; clypeo ♂ breviter subquadrato, margine antico vix arcuato paullo reflexo et incrassato, ♀ antice medio gradatim subacute producto oblique reflexo nec incrassato; thorace post dimidium rotundato-dilatato, postice perparum antice recte angustato, angulis posticis distinctis paullo obtusis, lobo basali perparum producto rotundato, margine utrinque usque ad angulum leviter sinuato et depresso; elytris margine laterali dimidio basali leviter incrassato, intus stria tenui delimitato, dimidio apicali lævi. Mesosterni processus crassus, subcylindricus, inclinatus. ♂. Tarsi antici ungue majore fisso, 4 posteriores unguibus simplicibus; pygidio apice breviter conico. ♀. Tarsi omnes ungue majore furcato; pygidio plano, apice parum declivi.

Long. 38 millim. ♂ ♀.

Hab. Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

CHLOROTA.

Chlorota (partim), Burmeister, Handb. der Ent. iv. 1, p. 359 (1844); Lacordaire, Gen. Col. iii. p. 347.

Seventeen species of this genus have been described, peculiar, like the preceding

genera of the subfamily, to Tropical America. I follow Lacordaire in limiting it to one only (II. B.) of Burmeister's four sections, in which the mesosternal process is very short and the scutellum small and cordate, but eventually the genus will have to be further subdivided.

1. **Chlorota terminata.** (Tab. XV. fig. 14.)

Pelidnota terminata, Serville, Encycl. Méth. x. p. 317 [1].
Chlorota terminata, Burm. Handb. der Ent. iv. 1, p. 364 [2].

Hab. NICARAGUA, Chontales (*Belt*); PANAMA, Chiriqui (*Trötsch*).—GUIANA, Cayenne [1 2]; AMAZONS.

An example from Chontales is shown on our Plate.

2. **Chlorota cincticollis.** (Tab. XV. fig. 16, ♂.)

♂. *Chlorota cincticollis,* Blanch. Cat. Coll. Ent. i. p. 208 [1].
♀. *Chlorota limbaticollis,* Blanch. loc. cit.[2]

Hab. MEXICO [1 2], Cordova (*Sallé*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*), Bonacca Island, Bay of Honduras (*Gaumer*); NICARAGUA (*Sallé*), Chontales (*Belt, Janson*).

In the male the thorax is broadly margined with yellow, and the elytra are quite smooth; in the female the sides of the thorax only (sometimes narrowly) are yellow, and the elytra are punctate-striate, with the sides and apex thickly punctured. These differences are found in individuals from all the above localities.

We figure a specimen from Nicaragua.

3. **Chlorota flavicollis.** (Tab. XV. fig. 15.)

Olongo-ovata, subtus cum pedibus et pygidio fusco-cuprea, capite splendide cupreo-aurato, thorace flavo aureo-nitenti maculisque vagis fuscis, scutello viridi-aurato, elytris fulvo-castaneis lævibus; clypeo semi-ovato, subtiliter striguloso, margine reflexo, vertice lævi; thorace subtilissime sparsim punctulato, post medium rotundato-dilatato, postice perparum angustato, margine basali utrinque prope scutellum leviter sinuato, lobo mediano levissime rotundato. Pygidium sat acute et dense confluenter strigosum, apice lateraliter compressum. Mesosterni processus brevi acuminatus; pectore rufo-hirto. ♂. Tarsi antici ungue majore crasso fisso, 4 posteriores unguibus simplicibus.
Long. 23 millim. ♂ ♀.

Hab. PANAMA, Bugaba (*Champion*).

Three examples, all males.

The mandibles are unarmed on the outer edge, except for the dentiform recurved outer angle, in which they differ from those of the strongly dentated *C. hæmorrhoidalis*, the type of the genus (*sensu* Lacordaire). The labrum is short and horizontal, with a well-defined bisinuated front edge; in *C. hæmorrhoidalis* it is deeply and broadly sinuated, nearly bilobed.

4. **Chlorota pallida.**

Chlorota pallida, Candèze, Harold's Col. Hefte, v. p. 15 [1].

Hab. Guatemala [1].

Differs somewhat in colour ("fulvo-testacea, scutello flavo, ... metathorace obscuro") and widely in sculpture ("prothorace inæqualiter sat fortiter punctato . . . . elytris seriatim punctulatis") from *C. flavicollis*. The sculptured elytra may be a sexual character, as in *C. limbaticollis*, but the sex is not mentioned in the diagnosis. The species is not contained in our collections.

5. **Chlorota (?) belti.** (Tab. XV. fig. 17.)

Late et regulariter ovata, alte convexa, castanea, polita, capite thoraceque æneo-relucentibus, subtus cum pedibus pallidior rufescenti-fulva, tarsis nigris; clypeo (♀) semiovato, granulato-ruguloso; thorace sparsissime punctulato, longe post medium subangulatim dilatato, angulis anticis acutis, lobo medio basali recte truncato, extus margine fortiter sinuato; scutello late triangulari, lateribus leviter arcuatis; elytris striis punctatis 10, interstitiis paullo convexis lævibus, 2° lato medio confuse punctato, margine laterali medio callo lato elongato lævi; pygidio plano transversim strigoso, punctulato rufo-piloso; corpore subtus rufo-piloso, medio lævi. Tarsi antici ungue majore basi spina brevi armato, 4 posteriores unguibus furcatis. Femora postica latissima. Mesosterni processus fere horizontalis planus, apice acuto curvato.
Long. 28, lat. 17 millim. ♀.

Hab. Nicaragua, Chontales (*Belt*). One example only.

Belongs to Burmeister's Section II. A of *Chlorota*, and allied to *Chlorota associata*, Waterh. The mandibles and labrum differ but little from those of *C. flavicollis*. The species with its allies, judging from the scanty material before me, seem to belong to a different generic type from *Chlorota*.

Group **RUTELINA**.

RUTELISCA.

Facies gen. *Rutelæ*. Clypeus antice valde angustatus, apice recurvatus, lateribus utrinque angulatis, fronte tuberculis transversis depressis duobus. Antennæ 10-articulatæ. Mandibulæ angustæ, acuminatæ, ascendentes. Labrum parvum, triangulare, verticale. Mentum parvum, ovatum, grosse piloso-punctatum, parte ligulare minima angustato-rotundata. Palpi labiales breves, articulo apicali crasso cuboidali. Maxillæ parvæ, acute 4-dentatæ. Thorax basi immarginatus. Scutellum breve et latum, triangulare. Mesosternum haud productum. Pedes cum tarsis graciles. Tibiæ anticæ tridentatæ. Ungues parum inæquales, graciles; majore (♂) pedum anteriorum crasso fisso, 4 posteriorum furcato; (♀) omnium furcato.

An interesting form, intermediate between the true Rutelæ and the Cyclocephali, and having a marked affinity with the Indian and Malayan genus *Parastasia*. The insect on which it is founded is no doubt that mentioned by Lacordaire in a note on the genus *Chalcentis* (Genera Col. iii. p. 353).

1. **Rutelisca flohri.** (Tab. XV. figg. 18 ♂, 19 ♀.)

Oblongo-ovata, convexa, nigra, subnitida, ♀ unicolor, ♂ verticis macula thoracis vitta laterali (macula nigra includenti) signaturisque discoidalibus, elytris macula rotunda utrinque basali margineque posteriore,

femoribus et tibiis anterioribus intus, flavis. Thorax lateribus sat regulariter arcuatis et anguste marginatis, sparsim punctulato; elytris striato-punctatis vix impressis; pectore nigro-fusco, villoso.
Long. 15–17 millim. ♂ ♀.

Hab. Mexico, near the city? (*Flohr*), Duraznal (*Sallé*).

I received the first example (a male) seen of this species from Mr. Julius Flohr, sent from the city of Mexico.

RUTELA.

Rutela, Latreille, Hist. Nat. Crust. et Ins. x. p. 201 (1804); Burmeister, Handb. der Ent. iv. 1, p. 381; Lacordaire, Gen. Col. iii. p. 352.

Nine species of the genus *Rutela*, as restricted by Burmeister and Lacordaire, have been described, all from Tropical America. It is remarkable that no fewer than five of the number are restricted (or nearly so) to the islands of the West Indies.

1. **Rutela striata.**

Cetonia striata, Oliv. Ent. i. no. 6, p. 79, t. 11. fig. 102 [1].
Rutela striata, Burm. Handb. der Ent. iv. 1, p. 386 [2].

Hab. Mexico, Tehuantepec (*Sumichrast, in coll. Sallé*).—West Indies, Guadaloupe [1 2].

Apparently common in the island of Guadaloupe. In the Mexican collection of Sallé there is only one example, which is perfectly similar to the ordinary black form from Guadaloupe, and must be considered a doubtful native of the mainland.

2. **Rutela specularis.** (Tab. XV. fig. 20.)

Elongato-ovata, supra lævissima, sanguinea, vertice lateribus, thorace vittis dorsalibus duabus antice abbreviatis, scutello elytrisque fasciis duabus subflexuosis (prima obliqua ante medium latera haud attingenti, secunda latiore apicali), nigris; subtus nigra polita, pedibus nigris partim castaneo-rufis; capite sparsim punctulato, clypeo acute bidentato; thorace angusto sat elongato, post medium subangulatim dilatato, angulis posticis obtusis sed distinctis vel subrectis, margine basali medio late rotundato leviter producto utrinque versus angulum sinuato; elytris anguste marginatis (striola marginali prope medium duplicata); pygidio lævi, basi tantum sparse striguloso, sanguineo apice nigro; metasterno polito, inter coxas intermedias late producto, apice obtuso. Pygidium, ♂, ante apicem valde rotundato-convexum, ♀ apice verticaliter declive et concavo.
Variat: toto nigra.
Long. 15–17 millim. ♂ ♀.

Hab. Mexico, Playa Vicente (*Sallé*).

Three examples only of this very distinct species have been received.

3. **Rutela sanguinolenta.**

Rutela sanguinolenta, Waterhouse, Ent. Monthly Mag. xi. p. 53 (1874) [1].

Hab. Costa Rica (*Van Patten*); Panama (*coll. Bates*).—South America, Colombia [1].

The single example from Costa Rica is of the typical colours of the species as described

by Waterhouse, *i. e.* elytra bright red with a central black fascia. Some examples from Colombia and Panama have the elytra entirely red, or black with a basal fascia only red.

4. **Rutela viridiaurata.**

Oblongo-ovata, viridi-aurata, resplendens; capite fere lævi, clypeo breviter et obtuse bidentato, reflexo; thorace lævi, medio sat late rotundato, sulco marginali lato transversim strigoso, angulis posticis subrectis, margine basali medio late recto, versus angulum utrinque valde sinuato ibique basi elytrorum sublobato penetranti; elytris disco striato-punctulatis, lateribus late impunctatis interstitiisque lato subsuturali confuse punctulato. Pygidium (♀?) valde convexum, sparse ramoso-strigulosum, margine apicali arcuatim sinuato. Processus sternalis conicus, crassus.

Long. 14 millim.

Hab. Costa Rica (*coll. Bates*).

CNEMIDA.

Cnemida, Kirby, Zool. Journ. iii. p. 146 (1827); Burmeister, Handb. der Ent. iv. 1, p. 378; Lacordaire, Gen. Col. iii. p. 351.

Peculiar to Tropical America. Two species only have been described, but several others are known in collections.

1. **Cnemida aterrima.** (Tab. XV. fig. 21.)

C. retusæ affinis, differt colore ebenino-nigro politissimo, elytris interdum litura parva mediana transversa fulva; thorace æqualiter convexo, absque foveis et strigis; elytris lævibus, foveola ramosa profunda basali (fundo lineatim punctata) altera parva laterali; pygidio medio lævi lateribus et apice strigoso, ♂ apice magis, ♀ minus, convexo.

Long. 12–13 millim. ♂ ♀.

Hab. Mexico (*Sallé, in coll. Sturm*), Santecomapan (*Sallé*), Misantla (*Höge*); Guatemala, Chacoj (*Champion*); Nicaragua, Chontales (*Belt, Janson*).

Many examples. I have adopted the MS. name which this species bears in the Sallé collection.

A Chontales specimen is figured.

2. **Cnemida intermedia.**

Ebenino-nigra, polita, elytris medio fascia angusta flexuosa fulva, thorace medio convexo lævi (subtiliter sparsim punctulato) dorso anteriore utrinque fovea magna ramosa, altera parva versus angulum posticum, et toto limbo laterali acute flexuoso-strigosis; elytris lævibus, in foveolis et versus apicem lineolis impressis punctatis. Pygidium ♂ ♀ inæqualiter convexum, lateribus multi-retusis, strigosum, medio tantum lævissimum.

Long. 10–11 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Belt*); Panama, Tolé, David (*Champion*).

Three examples.

In sculpture this species or subspecies more nearly resembles the South-Brazilian *C. lacerata* (Germ.) than the *C. retusa* of Guiana and the Amazons valley. It differs

from both *C. lacerata* and *C. retusa* only in the black colour of body and limbs, and in the more triangular emargination of the basal lobe of the thorax.

PELIDNOTA.

Pelidnota, MacLeay, Horæ Ent. i. p. 157 (1817); Burmeister, Handb. der Ent. iv. 1, p. 392; Lacordaire, Gen. Col. iii. p. 355.

Sixty species of this fine genus have been described. It is, like the preceding genera, American, but has a wider range, being spread over the temperate zone of North America, and in the South extending to the latitude of Buenos Ayres.

1. **Pelidnota belti.** (Tab. XV. fig. 22.)

Pelidnota belti, Sharp, Journ. Linn. Soc., Zool. xiii. p. 132[1].

Hab. Nicaragua, Chontales (*Belt*[1], *Janson*); Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Many examples, including type specimens named by Sharp. It is the only species in our fauna belonging to Burmeister's first section with bidentate clypeus.

A specimen from Chiriqui is shown on our Plate.

2. **Pelidnota notata.** (Tab. XV. fig. 23.)

Pelidnota notata, Blanch. Cat. Coll. Ent. i. p. 212[1].

Hab. Mexico[1], Tlacotalpam (*Sallé*); Guatemala, Cerro Zunil, El Tumbador (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Rogers*); Panama, Chiriqui (*Ribbe*, *Trötsch*), Bugaba, Tolé (*Champion*).

An elongate-oblong reddish-testaceous species, having three black spots on each elytron in the same position as those of the common North-American *P. punctata*, but the spots are much smaller and sometimes absent. The elytra are somewhat flattened and dull silky-shining owing to the extremely fine punctate-granulate sculpture, and the sutural apex is produced into a distinct spine. The upper surface (including the crown) is unicolorous, except for the slight metallic tinge of the head, thoracic margins, and scutellum. The under surface is dark brassy, punctate-shagreened, and clothed with grey hairs, the legs being testaceous-red, rarely metallic.

We figure an example from Tlacotalpam.

3. **Pelidnota prolixa.** (Tab. XV. fig. 24.)

Pelidnota prolixa, Sharp, Journ. Linn. Soc., Zool. xiii. p. 132[1].

Hab. Nicaragua, Chontales (*Belt*[1]).

Very closely allied to *P. notata*; still more elongate and depressed, the elytra much

more finely but similarly granulated, and the hind angles of the thorax subrectangular (rounded in *P. notata*), and the underside and pygidium rufous.

4. **Pelidnota costaricensis.** (Tab. XVI. fig. 1, ♀.)

P. punctatæ affinis; supra testacea, polita, viridi-æneo tincta, fronte et vertice, scutello elytrorumque sutura lætius viridi-æneis, elytris utrinque punctis 3 nigris; corpore subtus et pygidio saturatius viridi-æneis politis; pedibus anticis rufis, femoribus 4 posterioribus et tibiis extus dimidio viridi-æneis; capite grosse, clypeo confluenter punctatis; thorace lateribus latius quam in *P. punctata* rotundatis, angulis posticis obtusis vel rotundatis, sat grosse discrete punctato; elytris disperse subtiliter punctatis (et interdum striato-punctatis) nec subtilissime granulato-punctulatis, sutura apice brevissime acuto. Clypeus ♂ subsinuatim fortiter angustatus, apice haud late reflexo leviter sinuato, ♀ valde sinuatim angustatus, apice subrostrato reflexo truncato. Pygidium ♂ valde convexum, disperse punctatum, medio læve, ♀ parum convexum, lateraliter compressum.

Long. 24–28 millim. ♂ ♀.

Hab. Costa Rica (*Van Patten*), Cache (*Rogers*). Nine examples.

Var. *P. guatemalensis.* Differt tantum elytris immaculatis, crebrius punctulatis, pygidioque (♂) dense punctulato-striguloso.

Hab. Guatemala (*Sallé*), Capetillo (*Champion*); British Honduras, R. Sarstoon (*Blancaneaux*).

In colour of body and legs this variety much resembles *P. virescens*, especially the Guatemalan form, the latter, however, is more elongate and more brilliantly relucent, besides wanting the brassy-green bilobed spot on the vertex. The head, moreover, is smaller in the present species, and the clypeus in the male very different, being triangular, and not rounded.

5. **Pelidnota virescens.** (Tab. XVI. fig. 2, ♀.)

Pelidnota virescens, Burm. Handb. der Ent. iv. 1, p. 403 [1]; Blanch. Cat. Coll. Ent. i. p. 212 [2].

Hab. Mexico [1 2], Ventanas in Durango, Jalapa, Tacambaro (*Höge*), Ciudad in Durango, Presidio, San Blas (*Forrer*), Cuernavaca, El Camaron, Vera Cruz (*Sallé*).

This species is distinguished by its testaceous-yellow colour (clypeus concolorous) and its brilliant glassy silvery-green lustre. But it varies much in outline and convexity and sculpture, the elytra especially, which in the typical state are punctulate-striate with convex interstices, being sometimes smooth with very fine striæ and flat interstices. In the typical form the underside of the body and pygidium are brassy-green, and the legs testaceous, more or less inclining to brassy-green on the femora and tibiæ. In some localities varieties occur which, although not very constant, depart so much from the type as to merit separate mention:—

Var. 1. Elytra striis minime impressis interstitiisque planissimis.

Hab. Mexico, Acapulco (*Höge*), Vera Cruz (*Sallé*).

Var. 2. *P. aurescens.* Supra aurescenti-relucens; clypeus in ♂ antice plerumque angustato, apice reflexo subsinuato. (Tab. XVI. fig. 5.)

Hab. Guatemala, El Tumbador, Cerro Zunil, Volcan de Atitlan, San Isidro, Las Mercedes, Pantaleon (*Champion*).

Var. 3. *P. jalapensis.* Minus elongata, elytris paullo grossius punctato-striatis, sutura apice minime spinosa, pygidioque semper apice late pallide testaceo; clypeus in ♂ antice angustato, apice reflexo subsinuato. (Tab. XVI. fig. 4.)

Hab. Mexico, Jalapa (*Höge*).

A large number of examples, nearly all males; the few females have the pygidium vaguely pallid at the apex, and transitions occur between them and *P. virescens*, type form.

Var. 4. *P. chalcopus.* Supra toto saturate cupreo-viridis resplendens, elytris fulvo-castaneo-translucentibus; pedibus viridi-æneis, femoribus paullo rufo-translucentibus. (Tab. XVI. fig. 3.)

Hab. British Honduras, Cayo (*Blancaneaux*); Guatemala, San Isidro, Las Mercedes (*Champion*).

Two examples (male and female, the female duller in colour) from Cayo have smoother elytra than others of the same colour from Guatemala, but not smoother than individuals from Acapulco, and less smooth than one from Vera Cruz. Gradations exist between them and the var. *aurescens*.

6. **Pelidnota cupritarsis.**

P. lucidæ quam proxime affinis. Elongata, flavo-testacea vix æneo-tincta, corpore subtus pedibusque viridi-æneis his rufo-translucentibus, tarsis lætissime igneo-aureis.

Long. 26–27 millim. ♀.

Hab. Panama (*coll. Bates*).—Colombia, Sierra Nevada de Santa Marta.

Very closely allied to the common *P. lucida* of Venezuela, with which it has in common the immarginate base of the thorax, a character which would remove it not only from *Pelidnota*, but from the group to which *Pelidnota* belongs, if it were necessary to adhere to a single feature, in violation of all other signs of true affinity. It differs from *P. lucida* in the absence of æneous gloss, except on the sides of the head and thorax, and in the rich coppery-red tarsi. The under surface of the body, legs, and pygidium are rich metallic green, and, except in the middle of the body, strigulose-punctulate. The clypeus is subtriangular (♀), with the sides sinuated and the apex reflexed and truncate or obtuse. The thickened margin of the elytra extends to within a short distance of the sutural apex, which latter is simple, rectangular, or obtuse.

The species answers in some respects to the imperfect description given by Latreille of his *P. polita*, from Cuenca in Peru.

7. **Pelidnota —— ?**

Hab. Panama, Chiriqui (*Trötsch*).

A single, very imperfect, specimen of a distinct species.

8. **Pelidnota strigosa.** (Tab. XVI. fig. 6.)

Pelidnota strigosa, Castelnau, Hist. Nat. Ins. ii. p. 122 [1].

Hab. Mexico [1], Cordova, Tuxtla, Vera Cruz (*Sallé*), Jalapa, Misantla, Tapachula in Chiapas (*Höge*); Guatemala (*Sallé*), Zapote, San Isidro, Escuintla, El Reposo (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*), San Lorenzo (*Janson*); Costa Rica (*Van Patten*, *Rogers*); Panama, Volcan de Chiriqui (*Champion*).

Distinguished by its very elongate-ovate form; the elytra gradually flattened behind, with long and sharp sutural spine, and the thickened reflexed lateral margins continued nearly to the apex. In Mexico and Guatemala the colour is almost always testaceous-yellow, with strong brassy or golden reflections, but some Guatemalan examples are rich dark coppery with brassy-green reflections. The legs are coppery or reddish, with brassy femora. An example from Cordova is figured. In the southern parts of our region, according to the few examples received, the species is represented by a tolerably well-marked local variety:—

Var. *P. alutacea.* Caput et thorax densius punctata hoc punctis minutis intermixtis, versus latera punctulato-alutaceo, subopaco; corpore subtus cum pedibus suturatius viridi-æneo, pedibus nigris vel piceis.

Long. 27–30 millim.

Hab. Costa Rica (*Van Patten*); Panama, near the city (*J. J. Walker*), Volcan de Chiriqui (*Champion*), Chiriqui (*Ribbe*).

9. **Pelidnota punctulata.** (Tab. XVI. fig. 7.)

Elongato-oblonga vix ovata, capite thoraceque fusco-æneis, hoc lateribus clypeo et elytris fuscescenti-ochraceis, subtus obscure viridi-ænea, punctulato-alutacea, pedibus obscure testaceo-rufis æneo-tinctis; capite et thorace subconfluenter punctulatis hoc medio vel paullo post medium latiore, sulculo marginali basi indistincte impresso; elytris striato-punctulatis, interdum medio confuse punctatis, margine laterali incrassato mox pone medium terminata, apice suturali spinoso. Mesosterni processus brevis, conicus. Clypeus apice, ♂ minus ♀ magis et angustius, productus obtusus reflexus. Pygidium ♂ ♀ lateraliter infra compressum, ♂ disco valde convexum.

Long. 26–33 millim. ♂ ♀.

Hab. Mexico, Vera Cruz, Cordova, Campeachy (*Sallé*), Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); British Honduras, R. Hondo, Cayo (*Blancaneaux*); Guatemala, Zapote (*Champion*); Nicaragua, Chontales (*Belt*).

Varies greatly in the amount and strength of the punctuation of the elytra. We figure an individual from Cordova.

Group **PLUSIOTINA.**

PLUSIOTIS.

Plusiotis, Burmeister, Handb. der Ent. iv. 1, p. 417 (1844); Lacordaire, Gen. Col. iii. p. 357; Boucard, Proc. Zool. Soc. 1875, p. 117.

Twenty-two species of this superb genus have been described. It is highly charac-

teristic of the Central-American region, including the southern borderlands of the United States. I have seen two species only (one of which belongs to the burnished-metallic group of the genus *) from South America. *P. læta*, Sturm (=*P. psittacina*), the type specimen of which is in the Sallé collection, is a Mexican species recorded erroneously from Chili.

1. **Plusiotis victorina.** (Tab. XVI. fig. 13, ♂.)

Pelidnota victorina, Hope, Proc. Ent. Soc. Lond. 3 Aug. 1840 (vol. iv. Proc. p. 8)[1].
Plusiotis victorina, Burm. Handb. der Ent. iv. 1, p. 418[2].

Hab. Mexico[1], Tepansacualco (*Sallé*), Oaxaca (*Höge*; *Fenochio*, *in coll. Bates*), Villa Alta in Oaxaca[2].

Burmeister places this remarkable species at the head of the genus.
An example from Tepansacualco is shown on our Plate.

2. **Plusiotis boucardi.**

Plusiotis Boucardi, Sallé, Ann. Soc. Ent. Fr. 1878, Bull. p. xvii[1]; Boucard, Proc. Zool. Soc. 1878, p. 296, t. 16. fig. 3.

Hab. Costa Rica (*Van Patten*), mountains of Candelaria 5000 feet (*Boucard*[1]).

Most examples are smaller than *P. victorina* (27–32 millim.), to which it approaches in the dark brick-red colour with coppery tinge of the underside, and in the sculpture of the elytra. The whole upper surface is apple-green, with yellowish reflections. The pygidium in the male is strongly convex near the apex, in the female convex in the middle with retuse compression on the sides. The mesosternal process is subelongate and acutely conical as in *P. victorina*.

3. **Plusiotis aurora.**

Plusiotis aurora, Boucard, Proc. Zool. Soc. 1875, p. 119, t. 23. fig. 7[1].

Hab. Panama, Veragua[1].

I know this species only from the description and figure given by Boucard; the following is a variety, or possibly the typical form of it:—

Var. *Plusiotis chrysopedila*. (Tab. XVI. fig. 12.) Elongato-oblonga, pomaceo-viridis rufescenti-relucens,

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* **Plusiotis argenteola.**

P. resplendenti affinis, splendidissime argentea subaurata, sed quoad formam valde differt, magis elongata elytrisque ad trientem apicalem latioribus. Clypeus (♂?) antice sinuato-angustatus, margine apicali reflexo et sinuato; capite et thorace distincte disperse punctulatis et crebre subtilissime vix impresse punctulatis; elytris striato-punctulatis, interstitiis subtilius punctulatis, margine laterali tenui usque prope apicem continuato, versus basin verticaliter dilatato, intus stria punctata delimitato; subtus splendide aurata, tibiis rosaceis, tarsis nigris. Mesosterni processus acute conicus, validus. Pygidium versus apicem valde convexum, punctulatum, glabrum.

Long. 32 millim. ♂.

Hab. Colombia, inter Pasto et maris Pacifici littora.

marginibus elytrorumque sutura flavescentibus, subtus submetallico-viridis plus minusve rufo-micans, tarsis igneo-aureis; capite et thorace conspicue sed discrete punctatis, interstitiis subtilissime et dense vix impresse punctulatis, hoc medio angulatim dilatato crasse marginato sulco marginali profundo, angulis anticis acutis, posticis rectis; elytris subtiliter punctulato-striatis, interstitiis subtilissime dense vix impresse punctulatis, stria marginali lata punctata; pygidio subtilissime striguloso. Mesosterni processus brevius quam in *P. victorina*, conicus.

Long. 28–33 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Eighteen examples, offering no differences in colour. The usual secondary sexual characters in clypeus, anterior claws, and pygidium seem to be very slight in this species, though small differences in the outline of the clypeus show that we have both sexes. In all examples the pygidium is convex near the apex, and more or less culminate along the middle.

One of our examples bears a label in M. Boucard's handwriting "*Plusiotis aurora*, var., Boucard." This species, therefore, is that which he describes (Proc. Zool. Soc. 1875, p. 119) as a doubtful green variety of his *P. aurora*. The specimen figured is from the Volcan de Chiriqui.

4. **Plusiotis marginata.** (Tab. XVI. fig. 11.)

Plusiotis marginatus, Waterhouse, Ent. Monthly Mag. viii. p. 5 [1].

Hab. Panama, Chiriqui [1] (*Trötsch*), Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

The pygidium is strongly convex near the apex in both sexes. The males are distinguishable by the larger claw of the anterior tarsi being much longer and broader than in the females.

5. **Plusiotis resplendens.**

Plusiotis resplendens, Boucard, Proc. Zool. Soc. 1875, p. 119, t. 23. fig. 5 [1].

Hab. Costa Rica (*Van Patten*, *Rogers*), near San José (*Boucard* [1]); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Twenty-five examples. In this pale golden, very highly polished, almost silvery species the clypeus is a little narrowed near the apex in both sexes, and the apical margin reflexed and often distinctly sinuated. It is remarkable for the form of the mandibles, which show a tendency to reversion to the *Pelidnota* type, for their outer edge is not broadly rounded, but more or less sinuated, and in some examples very obtusely bidentate. The pygidium is clothed with long, stiff, tawny hairs on its posterior half; it is slightly more convex in the male than in the female, but has not the convex protuberance near the tip, which is so pronounced in *P. aurora*, var. *chrysopedila*, and *P. marginata*. The larger anterior claw of the male is much longer and broader than in the female. The size ranges from 22 to 27 millim.

This and other species of *Plusiotis* (as well as *Thyridium* and various *Antichiræ*) were met with flying in the hot sun about the tops of trees on the margin of a lagoon in the dense forest; numerous living and dead specimens of these (as well as vast numbers of Dynastidæ and other Lamellicornia) were also found submerged in the water or cast up on the banks (*Champion*).

6. **Plusiotis optima.** (Tab. XVI. fig. 10.)

Elongato-ovata, prope elytrorum basin valde convexa fere gibbosa, politissime aurescenti- vel igneo-cuprea, elytris certo situ leviter fulvo-translucentibus, subtus cum antennis, epipleuris, pygidio et pedibus rufescenti-luteis, tarsis cuprascentibus; capite sat sparsim punctato, clypeo semiovato margine leviter reflexo; thorace brevi et lato, ante medium valde angulatim dilatato, lateribus antice et postice sinuatis, angulis anticis prolongatis acutis, posticis acutis, sulculo marginali lato et profundo, margine postico sulculo medio late interrupto; elytris lævibus vix perspicue obsolete striatis, margine laterali usque ultra medium paullo incrassato-reflexo, callo apicali valido subconico; pygidio sparse punctulato, convexo, margine apicali supra anum alte elevato medio acute reflexo; pedibus fere impunctatis; mesosterni processu valde elongato, spiniformi.

Long. 26 millim. ♂.

Hab. Costa Rica (*Van Patten*).

One example only, from its short, squarely emarginated, apical ventral segment undoubtedly a female. The species differs in many respects from all its congeners, and from the nearly immarginate base of the thorax might be considered to approach *Thyridium* or *Ptenomela* more nearly than any genus of the *Pelidnota* group, but the marginal sulcus near the posterior edge of the thorax is scarcely impressed in other species of *Plusiotis*. The rich red-golden hue of the upper surface and mirror-like polish make it one of the most conspicuous species of a genus remarkable for metallic splendour.

7. **Plusiotis batesi.**

Plusiotis batesi, Boucard, Proc. Zool. Soc. 1875, p. 119, t. 23. fig. 6 [1], and 1878, p. 293 [2].

Hab. Costa Rica (*Van Patten*), Volcan de Irazu [1 2].

Twelve examples, both sexes. The clypeus in the male is obtusely rounded in front, and in the female a little more elongate and produced, with the slightly reflexed apical margin more or less sinuated. The mesosternal process is rather short, but acute, and not conical or thick vertically. It is a large (32 millim.) and somewhat narrowly oblong species, with relatively narrow thorax widened before the middle. The colour in the fresher examples is more silvery than in *P. resplendens*, but less purely white than in *P. chrysargyrea*.

8. **Plusiotis chrysargyrea.** (Tab. XVI. fig. 9.)

Pelidnota chrysargyrea, Sallé, Ann. Soc. Ent. Fr. 1874, p. 361 [1].

Plusiotis chrysargyrea, Boucard, Proc. Zool. Soc. 1875, p. 120 [2], and 1878, p. 294.

Hab. Costa Rica [1 2] (*Van Patten, in coll. Sallé*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Var. Aurea, tibiis et tarsis cupreis. Boucard, Proc. Zool. Soc. 1878, p. 294[3].

Hab. Costa Rica, Candelaria Mountains[3].

Six examples; all of a silvery hue, like a ball of mercury, to which Sallé aptly compares it; the sides of the breast beneath and legs being of the usually smooth subopaque pinkish-clayey hue characteristic of the undersides of all the allied species, but with the centre of the sternum (including the hind trochanters) and abdomen greenish-silvery polished and the tarsi rich violet. The variety described by Boucard is not contained in our collections.

The specimen figured is from the Volcan de Chiriqui.

9. **Plusiotis badeni.**

Plusiotis badeni, Boucard, Proc. Zool. Soc. 1878, p. 294, t. 16. fig. 2[1].

Hab. Mexico, Orizaba (*Sallé*).

A small, rather oblong species, with a roughly granulate-rugose pygidium, a burnished silvery apical callus, and a long and slender sternal process. The elytra are somewhat regularly punctate-sulcate, with the alternate interstices (four on each elytron) irregularly punctured, as in *P. auripes.* The sides of the thorax are broadly rosy-red.

10. **Plusiotis lacordairei.**

Plusiotis lacordairei, Boucard, Proc. Zool. Soc. 1875, p. 122, t. 23. fig. 4[1].

Hab. Mexico, Juquila[1] and Las Peras in Oaxaca (*Sallé*).

Very closely allied to *P. badeni*, but the silvery apical callus is larger and still more brilliant and the sides of elytra and body have a silvery lustre; the sternal process is only about one half the length, though very acute; and the pygidium is much less roughly punctate-rugulose. The thorax is destitute of red lateral vitta. Three examples, including both sexes.

11. **Plusiotis sallæi.**

Plusiotis sallæi, Boucard, Proc. Zool. Soc. 1875, p. 123, t. 23. fig. 3[1].

Hab. Mexico, Orizaba[1] (*Sallé*), Jalapa (*Höge*).

Nearly allied to the two preceding, but larger and (in the female) broadly ovate, with remarkably long tapering clypeus; the pygidium thickly punctured, without rugæ. The sternal process is nearly as long as in *P. badeni* and the sides of the thorax are rosy-red as in that species. The apical callus of the elytra is scarcely shining. Three examples, all females.

12. **Plusiotis auripes.**

Chrysina auripes, Gray in Griffith's Anim. Kingd., Ins. i. p. 517[1] (1832).

Plusiotis auripes, Burm. Handb. der Ent. iv. 1, p. 419[2]; Boucard, Proc. Zool. Soc. 1875, p. 122[3].
Pelidnota auripes, Hope, Proc. Ent. Soc. Lond. Aug. 3, 1840; Trans. Ent. Soc. Lond. iv. Proc. p. 8?[4].

Hab. Mexico[1 2 3 4].

The general form of this species is not described by Gray nor Burmeister, but they note the convex, alternately punctured and smooth, interstices of the elytra, and golden-green tarsi. Boucard, who states that he possesses Gray's type-specimen, describes its form as "oblongo-ovata," and decides, after careful examination of authentic examples of both species with the aid of Mr. C. O. Waterhouse, that it is specifically distinct from the following, with which it was united by Burmeister.

13. **Plusiotis psittacina.**

Pelidnota psittacina, Sturm, Cat. edit. 4. p. 340, t. 3. f. 6, ♂[1].
Plusiotis auripes (Gray), Burm. Handb. der Ent. iv. 1, p. 419.
Var. *Pelidnota læta*, Sturm, Cat. 1843, p. 341.
Plusiotis amalia, Burm. Handb. der Ent. iv. 1, p. 422.

Hab. Mexico[1] (*Sallé, ex coll. Sturm*).

There are two examples of this species in the Sallé collection, named by Sturm with the synonym on the label in his handwriting "*P. auripes*, Gray." Sturm therefore considered his species to be the same as the earlier described *P. auripes*. The insect is 33 millim. long, of elongate oblong shape, even in the female, and wholly clear apple-green, slightly metallic on the underside, epipleuræ, and legs, the tarsi more brilliant metallic green. The elytra are irregularly punctured on the alternate interstices (second, fourth, sixth, and eighth) and minutely punctulated throughout; the head and thorax are somewhat closely punctured, with the interstices minutely punctulated; and the pygidium punctulate-strigulose. The sternal process is very short, slightly projecting and conical.

The type-specimen of *P. læta* (Sturm) is contained in the Sallé collection; it is evidently a small and somewhat deformed example of *P. psittacina*. According to the label, Sturm regarded it as synonymous with *P. amalia*, Burm., and as such it has been classed by subsequent authors. Sturm gave the locality as "Brazil," Burmeister as "Valparaiso"; but the insect is most certainly Mexican. It is to be remarked that Burmeister placed his *P. amalia* in a different section (sternal process very short) of the genus from *P. auripes* (sternal process projecting as a strong cone beyond the middle coxæ). In both of Sturm's species, *P. psittacina* and *P. læta*, the sternal process is of the same length, very short, and only slightly projecting.

14. **Plusiotis costata.** (Tab. XVI. fig. 14, ♂; 15, ♀ *var.*)

Plusiotis costata, Blanch. Cat Coll. Ent. i. p. 210[1].

Hab. Mexico[1], Orizaba, Mirador (*Sallé*), Jalapa, Misantla (*Höge*).

More than fifty examples, offering scarcely any differences of form or punctuation. It is a broadly-ovate species, the outline being due to the flattened expansion of the sides (including the marginal rim) of the elytra; the convex interstices are smooth, except the second, and towards the base the sixth, both which are irregularly punctured. The pygidium is minutely punctured, and not closely strigulose as in *P. psittacina*; and the sternal process is more than twice as long as in that species and conical. Blanchard described *P. costata* from a singular colour-variety, clayey reddish-tawny, which proves to be a rare exception; the great majority of our specimens being apple-green, with the apical callus concolorous, and the thickened margins of the elytra and the tarsi sometimes golden. Intermediate examples occur in which the upper surface has strong yellow reflections. The pygidium in the female is flattened to the apex, in the male it is evenly convex. The size varies from 25 to 35 millim.

15. **Plusiotis chloreis.** (Tab. XVI. fig. 16, ♂.)

P. costatæ proxime affinis, sed minor, oblonga, thorace postice angustiore angulisque anterioribus valde porrectis, acutis; elytris profundius punctulato-sulcatis lateribusque prope medium multo minus explanatis cum margine minus incrassato; toto læte pomaceo-viridis, tarsis viridi-metallicis; ♂ clypeus sicut in *P. costata* ♂, apice anguste sinuato; pygidio differt ante apicem protuberanti-convexo. Processus sternalis paullo longior, acute conicus. ♀ ? Elytra versus apicem paullo dilatata margineque usque prope apicem incrassato.

Long. 25 millim. ♂ ♀ ?

Hab. Mexico, Volcan de San Martin (*Sallé*).

The second and sixth elytral interstices are, nearly as in *P. costata*, irregularly punctured towards the base. This mode of sculpture and the much longer sternal process distinguish the species from *P. psittacina*, which it resembles in the oblong form of the body. The female example, very imperfect, is from Orizaba (*Sallé*).

16. **Plusiotis prasina.**

Plusiotis prasina, Boucard, Proc. Zool. Soc. 1878, p. 295, t. 16. fig. 5 [1].

Hab. Mexico [1], Orizaba, Yolos (*Sallé*).

Three examples, including, according to Boucard, a type-specimen. Length 30 millim. ♂ ♀.

Closely allied to *P. laniventris*, the sides of the abdomen and the pygidium in the male thinly clothed with long hairs. *P. prasina* differs, however, from that species in the outer side of all the tibiæ being smooth and not scabrous, and in the entire upper surface, but especially the elytra, being much more finely and smoothly punctured, though in both the species the punctuation extends over the whole elytra. The punctured striæ are scarcely impressed. The female in both species has the same broadly-ovate outline, with the sides broadly expanded and the outer margin flexuous or arcuated. The legs are of a pinkish-clayey hue, the femora greenish, the tarsi

golden-green, but the claws generally piceous. The sternal process is very short and conical.

17. **Plusiotis laniventris.**

♂. *Pelidnota laniventris*, Sturm, Cat. 1843, p. 339, t. 3. fig. 5[1].
♀. *Pelidnota latipennis*, Sturm, loc. cit. p. 338, t. 3. fig. 4[2].
Plusiotis laniventris, Burm. Handb. der Ent. iv. 1, p. 420[3].

Hab. Mexico[1 2 3] (*Sallé, ex coll. Sturm*, ♂ ♀), Jalapa (*Flohr, Höge*).

The male only has the abdomen and pygidium clothed with long soft blonde hairs; the pubescence of the sternum is also longer and denser than in the allied species. The elytra are coarsely and rugosely punctured throughout and furrowed with deep punctured striæ. All the tibiæ are very coarsely scabrose-punctate on their outer sides.

18. **Plusiotis adelaida.** (Tab. XVI. fig. 17.)

Pelidnota adelaida, Hope, Proc. Ent. Soc. Lond. Aug. 3, 1840; Trans. Ent. Soc. Lond. iv. Proc. p. 8[1].
Plusiotis adelaida, Burm. Handb. der Ent. iv. 1, p. 421[2]; Boucard, Proc. Zool. Soc. 1875, p. 121[3].
Pelidnota ornatissima, Sturm, Cat. 1843, p. 341, t. 3. fig. 7[4].

Hab. Mexico[1 2 4], La Parada near Oaxaca[3] (*Sallé*), Jalapa, Oaxaca (*Höge*); Guatemala, San Gerónimo (*Champion*).

Fourteen examples, including all colour-gradations from the green type-form with silvery elytral vittæ to a dark coppery-red with silvery-green vittæ, and the type-specimen of Sturm's *P. ornatissima*, which is intermediate in colours. The sternal process is very short and obtusely triangular. An example from La Parada is figured.

19. **Plusiotis rodriguezi.**

Plusiotis rodriguezi, Boucard, Proc. Zool. Soc. 1878, p. 295, t. 16. fig. 1[1].

Hab. Guatemala, near the city (*Rodriguez*[1]), Totonicapam, Quiche Mountains 7000 to 9000 feet (*Champion*).

An oblong apple-green species with silvery tinge, not unlike *P. lacordairei*; the humeral and apical calli of the elytra and margins are polished silvery-green, and the underside, femora, and tarsi metallic light green, with the sterna and legs and sides of abdomen clothed (in the male) with blonde pubescence as long and dense as in *P. laniventris*. The outer sides of the tibiæ are reddish. The sternal process is extremely short, tuberculiform, and polished.

20. **Plusiotis lecontei.** (Tab. XVI. fig. 19.)

Plusiotis lecontei, Horn, Trans. Am. Ent. Soc. x. p. 120[1].

Hab. North America, Arizona[1], New Mexico[1].—Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Ciudad in Durango (*Forrer*), Suapan, Volcan de Orizaba (*Sallé*).

An oblong species of dark-green colour with strong metallic gloss, especially on the margins, scutellum, abdomen, and pygidium; the elytra punctulate-sulcate; and the head (especially the clypeus) smaller than in the allied species. The sternal process is very short, tuberculiform, and hidden in the long fulvous villosity of the pectus.

The Orizaba example in the Sallé collection is much larger than those from northern localities (30 millim., ♂).

A specimen from Ciudad is figured.

21. **Plusiotis woodi.**

Plusiotis woodii, Horn, Trans. Am. Ent. Soc. xii. p. 124[1].

Hab. North America, Rio Grande[1], Texas.—Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

We have only one much damaged example of this distinct species, which is regularly and rather distantly punctured (without impressed striæ) over the elytral surface. The colour is a beautiful light green, metallic on the under surface. The sternal process is very short, tuberculiform.

22. **Plusiotis chalcothea.** (Tab. XVI. fig. 8.)

Elongato-oblonga, convexa, saturatius fusco-ænea, nitidissima, viridi-æneo-relucens; capite parvo, dense punctato, vertice læviore; clypeo antice triangulari, apice anguste producto et reflexo, ♂ breviore, ♀ longiore; thorace convexo a basi ad apicem curvatim angustato, angulis anticis obtusis, posticis subrectis, margine basali medio subinterrupto, supra disco minutissime sparsim punctulato vel lævi, lateribus et sulculo marginali grossius et crebrius punctatis; elytris punctulato-striatis, stria suturali versus apicem profunde impressa, margine laterali (♂ ♀) tenui. Pygidium (♂ ♀) mediocriter convexum, sparsim longe pilosum, minute punctulatum vel strigulatum vel fere læve, splendide viridi-æneum. Subtus cum pedibus viridi-ænea, nitida, his plus minusve piceo-rufo-translucentibus, pectore et abdomine lateribus longe fulvo-villoso. Sterni processus minutus, tuberculiformis.

Long. 25–31 millim. ♂ ♀.

Hab. Costa Rica (*Van Patten*).

This species approaches the Colombian *P. anomala* (Burm.) in some of its characters, but it is a more typical *Plusiotis*; the postcoxal process of the prosternum is well developed, but bends at an obtuse angle, and the apical part between the coxæ is unusually broad.

Eight examples.

23. **Plusiotis mniszechi.**

Plusiotis mnizechii, Boucard, Proc. Zool. Soc. 1875, p. 124, t. 16. fig. 41[1].

Hab. Mexico[1].

This species is not contained in our collection.

CHRYSINA.

Chrysina, Kirby, Zool. Journ. iii. pp. 127, 520 (1827); Burmeister, Handb. der Ent. iv. 1, p. 414; Lacordaire, Gen. Col. iii. p. 359.

Like *Plusiotis*, a characteristic Central-American genus, containing species of large size and beautiful colours; but differing as regards distribution in being confined to Mexico. The characters which distinguish it from *Plusiotis* are almost solely derived from the males, this sex having enormously developed hind legs, the females being *Plusiotes* in everything except the convexity or protuberance of the hind part of the postpectus and the inner end of the posterior coxæ—a peculiarity developed in far greater degree in the male, but transmitted in part to the female.

1. Chrysina macropus.

♂. *Scarabæus macropus*, Francillon, Descr. of a new and rare insect from Potosi, 1795, tab. ♂; Shaw, Nat. Miscell. tab. 384.

♀. *Chrysina peruviana*, Kirby, Zool. Journ. iii. p. 520, t. 14. fig. 3.

Chrysina mexicana, G. R. Gray, Griffith's Anim. Kingd., Ins. i. p. 517, t. 46. fig. 1.

Chrysina macropus, Burm. Handb. der Ent. iv. 1, p. 416[1].

Hab. Mexico, San Luis Potosi [1], Orizaba (*Sallé*), Misantla, Jalapa (*Höge*).

The males vary much in size, and correspondingly in the convexity or protuberance of the hind part of the postpectus and the inner condyle of the coxæ to which the monstrous hind femora are articulated. The condyle, the trochanters (at least their outer sides), and the anterior edge of the coxæ are blackish or dark green in both sexes; and in the female the epipleural fold of the elytra terminates abruptly, forming a short lobe for the grasp of the vigorous males in copulation.

I cannot but consider the following to be varieties of *C. macropus*, but they are varieties of singular interest as resting chiefly on modifications of the sexual characters, and at the same time local.

Var. *C. mniszechi*, Boucard MSS. in coll. Sallé. Trochanter, condylus coxarumque margo anterior cuprei ex parte nigrescentes. ♂ minus late oblongus; ♀ elytrorum plica epipleuralis postice minus abrupta (nec verticaliter) terminata.

Hab. Mexico, Tepansacualco (*Sallé*), Jalapa (*Höge*).

Var. *C. adolphi*, Chevr. Rev. Zool. 1859, p. 481 [2]. Trochanter, condylus coxarumque margo anterior virides partim læte cuprei. ♂ minus late oblongus, postpectusque minus convexum; ♀ elytrorum plica epipleuralis postice gradatim terminata ibique paullo explanata nec lobata.

Hab. Mexico, Oaxaca [2] (*Fenochio, in coll. Bates*), Juquila (*Sallé*). Our series includes Chevrolat's types.

Var. *C. modesta*, Sturm, Cat. 1843, p. 338, t. 3. fig. 3 [3]. ♀. Trochanter, condylus coxarumque margo anterior omnino æneo-virides, elytrorumque plica sicut in *C. adolphi*. Thorax et elytra subtilissime punctulata fere lævia; tarsi chalybei.

Hab. Mexico [3] (*Sallé, ex coll. Sturm*). Specimen typicum.

2. Chrysina amœna.

♂. *Pelidnota amœna*, Sturm, Cat. 1843, p. 337, t. 3. fig. 2[1].
♀. *Pelidnota æruginosa*, Sturm, loc. cit. t. 3. fig. 1[2].
Chrysina amœna, Burm. Handb. der Ent. 1, i. p. 417[3].

Hab. Mexico[1 2 3] (*Sallé, ex coll. Sturm*; exempl. typica), Ciudad in Durango (*Höge*), Jalapa (*Sallé*), Mineral el Chico (*Flohr, in coll. Bates*).

The upper surface in this distinct species is thickly punctured and less shining, the elytra very closely punctured, with finer punctures intermixed, and scarcely any trace of striæ. The underside varies in colour, but is much more brilliant than in *C. macropus*, wholly rich red-coppery, or the abdomen silvery and sometimes dark near the base. In the single female from Ciudad the head, femora, tibiæ, and pygidium are tawny-vermilion with a metallic tinge. The underside and pygidium are clothed with long hairs, which are denser in the female. The epipleuræ in the female taper gradually nearly as in *C. macropus*, var. *adolphi*, but without expanded upper margin, and they reach only a little beyond the middle of the elytra instead of nearly to the outer apex.

Subfam. *HETEROSTERNINÆ*.

MACROPOIDES.

Macropoides, Guérin, Rev. Zool. 1844, p. 262; Lacordaire, Gen. Col. iii. p. 360.
Macropnus, Horn, Proc. Acad. Phil. 1866, p. 397.

This genus, with *Heterosternus* and its allies, forms a distinct subfamily (indicated by Horn in defining the genus *Macropnus*), distinguished from the Rutelinæ by the flexuous and fine frontal suture, and from the Areodinæ by the form of the clypeus (strongly narrowed from the base and obtusely trapezoidal) and of the mandibles (the outer apical angle bent upwards and prolonged into a tapering and ascendent tooth projecting beyond the margin of the clypeus); in repose the ascendent apices of the two mandibles lie parallel and close to each other. The form resembles that of the mandibles in *Rutelisca*, and is an exaggeration of that usual in *Parastasia*. The base of the thorax is generally immarginate; but in this respect *Heterosternus* is peculiar, the marginal sulcus being deeply impressed except in the middle, where it is faint or interrupted. The males in some of the species have the same enormous development of the hind legs, with a corresponding protuberant postpectus and inner end of the coxæ, as in *Chrysina*. The major tarsal claw in all the tarsi of both sexes is forked, and the postcoxal process of the prosternum short and triangular, not bent and continued horizontally between the coxæ as in *Pelidnota* and its allies.

Three species of *Macropoides* are known, all peculiar to the Mexican and Central-American fauna.

1. **Macropoides nietoi.** (Tab. XVI. fig. 20, ♀.)

Macropoides nietoi, Guérin, Rev. Zool. 1844, p. 259; Lac. Gen. Col., Atlas, t. 34. fig. 2, ♂ [1].

Hab. Mexico [1], Cordova (*Sallé*); Nicaragua, Chontales (*Janson*).

A female specimen from Cordova is figured.

2. **Macropoides mniszechi.**

Macropnus mniszechi, Sallé, Rev. et Mag. Zool. 1873, p. 14, t. 10. figg. 1–1 *e* [1].

Hab. Mexico, Toxpam near Cordova [1] (*Sallé*, exempl. typica).

The clypeus is rather longer and more narrowed than in *M. nietoi*, and rather deeply notched at the apex. The species is perfectly congeneric with *M. nietoi*.

3. **Macropoides crassipes.**

Macropnus crassipes, Horn, Proc. Acad. Phil. 1866, p. 397; Trans. Am. Ent. Soc. i. t. 3. fig. 7 [1].

Hab. Honduras [1].

The incomplete and inaccurate description of *Macropoides* given by Guérin and Lacordaire, the latter by placing it near the *Pelidnotæ* and leaving it to be inferred that it has the same characters as that group, led Dr. Horn to institute the genus *Macropnus* on a large species from Honduras, which he informs me he now believes to be congeneric with *M. nietoi*. The species is not represented in our collection.

4. **Macropoides (?) ——?**

Hab. Nicaragua, Chontales (*Belt*).

A single example of a species probably belonging to this genus, but being a female it is not possible to refer it with certainty.

HETEROSTERNUS.

Heterosternus, Dupont, in Guérin's Mag. Zool. 1832, Ins. t. 10; Burmeister, Handb. der Ent. iv. 1, p. 411; Lacordaire, Gen. Col. iii. p. 360.

Two species only are known of this genus, remarkable for its elongate form and the great length of the hind legs in the male with greatly elongated tibiæ. The postpectus and condyles of the hind coxæ are still more strongly developed and protuberant than in *Chrysina macropus*; but the coxal plate is much widened towards the supports of the femora, which latter are extremely elongated and of uniform width. The clypeus and mandibles are shaped almost exactly as in *Macropoides nietoi*. In the female the epipleuræ terminate at the level of the hind coxæ, where the elytra are angularly dilated.

1. **Heterosternus buprestoides.**

Heterosternus buprestoides, Dupont, in Guérin's Mag. Zool. 1832, Ins. t. 10 [1].

Hab. Mexico [1].

This species is not contained in our collections.

2. **Heterosternus rodriguezi.** (Tab. XVI. fig. 18, ♂.)

Heterosternus rodriguezii, Candèze in Har. Col. Hefte, v. p. 43 [1].

Hab. Guatemala [1], Los Diamantes (*Champion*); Panama, Chiriqui (*coll. Bates*).

Ochreous-tawny above, with the margins of the head and thorax and frontal suture edged with black, the underside dark chestnut-brown. The male differs from that of *H. buprestoides* in the elytra not being narrowed and prolonged at the apex, and in the hind tibiæ being strongly curved and densely fringed inside with fulvous hairs.

Mr. Champion obtained one example only, a male, on the Guatemalan Pacific slope. A female specimen from Chiriqui, resembling an ordinary *Pelidnota* in form and many years in my collection without a name, almost exactly resembles the Guatemalan male in colour and sculpture; it differs only in the suture and outer margin of the elytra, as well as the head and thorax, being narrowly edged with black. The male example from Los Diamantes is figured.

PARISOLEA.

Gen. *Macropoidi* proxime affinis, sed sexus quoad pedes posticos etc. haud diversi. Corpus oblongo-ovatum, mediocriter convexum. Clypeus trapezoidalis, angulis anticis rotundatis, margine acute reflexo, antice profunde et sat anguste sinuato; sutura frontalis flexuosa. Mandibulæ acuminatæ, ascendentes. Labrum omnino deflexum. Antennæ articulis 3°–6^{m} cylindricis arcte conjunctis. Thorax basi immarginatus. Elytra supra coxas posticas leviter angulatim dilatata. Prosterni processus postcoxalis brevis, triangularis, planus; mesosterni mucro ultra coxas productus sat planus. Pedes ♂ ♀ mediocres; tibiæ 4 posteriores apice extus unispinosæ; tarsi omnes unguibus majoribus apice furcatis; ♂ tarsi anteriores ungue majore longiore et robustiore denteque superiore tenui, spiniformi.

Two new species from Mexico are referable to this genus.

1. **Parisolea alba.**

Supra albo-, subtus fulvo-, testacea, nitida; capite thoraceque toto sparse punctatis, hoc prope medium rotundato-dilatato, postice parum antice fortius angustato, angulis anticis subrectis, posticis obtusis subrotundatis, margine laterali tenui usque ultra angulum posticum continuato; elytris punctato-striatis, striis 3^{a}, 4^{a} et 5^{a} 6^{a}que geminatis, interstitiis planis lævibus, 2° (inter striam suturalem et 2^{m}) lato postice punctato, lateribus striis quatuor paullo irregularibus. Pygidium ♂ paullulum convexum, ♀ planum, transverse strigulosum. Pectus albo-villosus.

Long. 19–21 millim. ♂ ♀.

Hab. Mexico, near the city (?) (*Flohr*).

2. **Parisolea fulva.** (Tab. XVII. fig. 1.)

P. alba differt solum colore fulvo- vel rufo-testacea. ♂ ♀.

Long. 18–20 millim.

Hab. Mexico, Jalapa (*Höge*). Six examples.

Subfam. *AREODINÆ.*

COTALPA.

Cotalpa, Burmeister, Handb. der Ent. iv. 1, p. 423 (1844); Horn, Trans. Am. Ent. Soc. 1871, p. 338.

A genus hitherto recorded only from temperate North America; six species are known, chiefly from the southern and western States. The two following have a longer and more acutely rounded clypeus than in the typical species of the genus, but not much more so than in *C. ursina*, and they differ further in the major claw of all the tarsi, in the male, being cleft (unequally and narrowly) at the apex.

1. **Cotalpa nigro-ænea.** (Tab. XVI. fig. 22, ♂.)

Anguste ovata, capite, thorace pygidioque viridi-æneis, politis, elytris corpore subtus cum pedibus nigris viridi-æneo tinctis, subtus cum femoribus, pronoti marginibus et pygidio longe (pectore toto densissime) rufo-villosa. Caput grosse sed discrete punctatum, punctis minutis intermixtis; clypeo semiovato, antice subacute rotundato, margine reflexo, sutura frontali paullo flexuosa; thorace minus transverso (paullo elongato), paullo post medium angulatim dilatato, antice rectilineatim angustato, angulis anticis acutis, posticis obtusis sed distinctis, margine basali medio interrupto; scutello sparsim punctulato; elytris ante medium perparum ampliatis (nec angulatis), epipleuris apud coxas posticas terminatis, sparsim (apud strias lineatim) punctulatis, limbo posteriore rugoso-punctato et fulvo-setoso. Mesosternum inter coxas anguste carinatum, nullo modo porrectum. Pygidium (♂) leviter convexum, subconfluenter punctulatum, punctis piliferis majoribus intermixtis. ♂. Ungues majores prope apicem fissi, parte superiore tenui setiformi, breviore.

Long. 21 millim. ♂.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*).

Five examples, all males.

2. **Cotalpa aurescens.** (Tab. XVI. fig. 21, ♂.)

C. nigro-æneæ affinissima; differt colore supra (clypeo obscuro excepto) lætius viridi-ænea, certo situ aureo-relucens, pectore, femoribus pygidioque densius et longius fulvo villosis; occipite thoracisque margine fulvo-fimbriatis. Clypeus semiovatus, sed mox a basi paullo dilatatus, margine altius elevato. Cætera sicut in *C. nigro-ænea*.

Long. 23 millim. ♂.

Hab. MEXICO, Chiapas (*Sallé*).

One example only. The long and dense pale tawny villosity of the under surface, pygidium, &c. is exceedingly fine and silky, differing much from the shorter and stiffer rusty-red, but still very dense, hairs of *C. nigro-ænea*.

PARACHRYSINA.

Chrysina (?), Thomson, Archiv. Ent. i. p. 148 (1857).

The small species, *C. truquii*, which Thomson doubtfully referred to the genus

Chrysina, differs from the group to which *Chrysina* belongs by the distinct frontal suture. This suture is flexuous; the clypeus is semiovate (in the female more quadrate), with the margins much reflexed; the mandibles with entire (rounded) outer edge; and the thorax, margins, and the under surface of the body villose. In short it has all the characters of the Areodinæ, with the important peculiarity that it has 9-jointed antennæ, in which it differs from all other Rutelinæ. The males have greatly enlarged hind legs, with broad, interiorly-flattened femora and tibiæ, the inner apex of the latter prolonged and acute, and the trochanters with a long, free, hook-shaped apex. The forehead in the male is flattened, forming a semi-ovate sloping disc. The mesosternum in the male is prominent between the middle coxæ, and conical but scarcely projecting; in the female depressed. In the female the forehead is simple, and the hind legs normal, except that the apex of the trochanters is free for a short space and the inner apex of the tibiæ is slightly produced. In both sexes the tarsal claws are very long and acute, and all are simple; they are very unequal in length, and the tarsal joints are short and compact as in all true Rutelidæ, so that there is no ground for referring the genus to the Melolonthidæ as has been suggested. In the Sallé collection the species bears the name of *Plectris truquii*.

1. **Parachrysina truquii.** (Tab. XVI. figg. 23, ♂; 24, ♀.)

Chrysina (?) *truquii*, Thomson, Archiv. Ent. i. p. 148, t. 10. fig. 4[1].

Hab. Mexico (*Truqui*[1]), Morelia (*Sallé*), Yautepec (*Höge*).

The male is more ovate than the female, and differs from it in colour and punctuation, the thorax and elytra being fulvous, the former finely punctured and with an æneous and smooth dorsal vitta; in the female the thorax is strongly punctured and brassy-green, with the side-margins broadly fulvous. The size varies from 11 to 15 millim.

BYRSOPOLIS.

Byrsopolis, Burmeister, Handb. der Ent. iv. 1, p. 425 (1844).

A genus hitherto known only from tropical South America, whence four species have been described. They seem to be perfectly congeneric with Burmeister's typical species (known to me only by the description), with which they agree in the form of the maxillæ, and especially in the slender tarsi and tarsal claws; the peculiar form of the labrum is not mentioned by Burmeister—in our species its upper surface is entirely concealed under the clypeus. They approach the Cyclocephalinæ, especially the genus *Democrates*, from which the shorter and closer-jointed hind tarsi chiefly distinguish them and justify their retention in the Rutelidæ. This at least applies to the first species, in our two examples of the second the tarsi are wanting. The prosternum has a broad, scarcely ascendent, postcoxal process; the mesosternum is simple.

1. **Byrsopolis lanigera.** (Tab. XVII. fig. 2.)

Castaneo-nitida, supra glabra, subtus cum pygidio et femoribus dense fulvo-hirta vel villosa; capite dense aspere confluenter punctato; clypeo sinuatim angustato, apice quadratim sublobato, reflexo, truncato; thorace quam elytra multo angustiore, lateribus regulariter arcuatis, angulis posticis rotundatis, anticis nullo modo productis, anguste marginato, margine basali medio subinterrupto, supra regulariter convexo, confluenter disco sparsius punctato, interstitiis punctulatis linea irregulari dorsali lævi; scutello breviter cordato; elytris subtilius punctulatis, nitidis, costulis (vel striis geminatis) utrinque quatuor parum distinctis; pygidio parum convexo, dense piloso-punctulato.

Long. 28 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*).

A single perfect example, bearing Sturm's label "*Scarabæus laniger*, mihi."

2. **Byrsopolis chihuahuæ.**

Minus convexa, rufo-castanea, subtus sicut in *S. lanigera* fulvo-villosa, sed pygidio plus minusve ænescenti; capite crebre aspere confluenter punctato; clypeo triangulari, lateribus leviter sinuatis, apice medio acuminato-reflexo; thorace multo minus convexo, margine paullo crassiore et magis reflexo omnino integro, paullo post medium subangulatim dilatato, angulis posticis subrectis, anticis subacutis, supra sicut in *S. lanigera* punctato; scutello æneo vel cupreo; elytris grossius punctulatis, utrinque costulis 3 vel 4 distinctioribus cum striis punctatis geminatis impressis. (Tarsi omnes desunt.)

Long. 26–28 millim.

Hab. Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

Two imperfect examples.

Subfam. *ANOPLOGNATHINÆ.*

PHALANGOGONIA.

Phalangogonia, Burmeister, Handb. der Ent. iv. 1, p. 451 (1844).

A genus, so far as at present known, peculiar to Mexico and Central America. Three species have been described.

1. **Phalangogonia obesa.**

Phalangogonia obesa, Burm. Handb. der Ent. iv. 1, p. 452 [1].

Hab. Mexico [1], Chinantla (*Sallé*).

Burmeister mistook the example of this species on which he founded his genus for a male, and hence gave erroneous characters to *Phalangogonia* and to the subfamily to which it belongs. It was evidently a female, as the male has robust tarsi and claws, and the anterior angles of the clypeus produced and dentiform, as in many of the Australian Anoplognathinæ. The three examples of the species in the Sallé collection vary much in colour, and one is a male. Besides the acutely-dentated angles, the arcuated fore border of the clypeus is strongly reflexed; and the robust major claw in all the tarsi is not forked as in the male, nor properly speaking cleft, the upper part of the divided

tip being very spiniform and much shorter than the lower part. The hindmost tarsi only have a brush of stiff fulvous hairs beneath the first two joints.

The thorax is rather strongly punctured, quite strongly and closely so towards the sides; the lateral margin, from the dilatation to the anterior angles, is greatly decreased in thickness, and the anterior angles are acute. The elytra are finely and sparsely punctulated, but vary somewhat in this respect; the costæ are indicated by punctured lines, and the posterior limb is closely and irregularly punctured; the sutural apex is not produced. The legs, including the tarsi, are red. The pygidium is subopaque, finely alutaceous or vermiculate-strigulose, without mixture of piliferous punctures.

2. **Phalangogonia sperata.**

Phalangogonia sperata, Sharp, Journ. Linn. Soc., Zool. xiii. p. 134[1].
Phalangogonia stipes, Sharp, loc. cit.[2]

Hab. Central America[1]; Nicaragua[2] (*Sallé*), Chontales (*Janson*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

A large number of examples.

Differs from *P. obesa* (both sexes) in the much finer and sparser punctuation of the thorax and in the lateral margins of the same being continued of equal thickness to the anterior angles, which latter are obtuse, sometimes rounded; also in the sutural apex of the elytra having a distinct spiniform tooth, and in the pygidium being very minutely strigulose and sprinkled with larger piliferous punctures. The male differs from the same sex of *P. obesa* in the three basal joints of the hindmost tarsi and two of the middle tarsi being clothed with a brush of fulvous hairs; it has similarly robust and very unequally cleft major tarsal claws, and the clypeus is acutely produced at the anterior angles, but the front margin is much straighter and scarcely arcuated.

The colour varies little on the upper surface, but on the under all gradations exist from uniform fulvo-castaneous to black, the metasternum sometimes and the abdomen at others only being black; the last-mentioned (described as the colour of *P. stipes* by Dr. Sharp) is most prevalent in Chiriqui.

Examples occur at Chontales with black tarsi (the abdomen and sternum variable), but I can detect no structural difference between them and the others.

3. **Phalangogonia lacordairei.** (Tab. XVII. fig. 3.)

Phalangogonia obesa, Lacordaire, Gen. Col. iii. p. 371[1] (nec Burm.).

Late ovata, fulvo-testacea, polita, marginibus capitis, thoracis, scutelli elytrorumque anguste nigris; subtus nigra, nitida, femoribus et tibiis rufo-castaneis; pygidio nigro politissimo, punctis nonnullis longe piliferis versus apicem exceptis, impunctato. Clypeus dense confluenter punctatus (♀), antice leviter arcuatus, angulis valde rotundatis; thorax post medium angulatim dilatatus, margine antice gradatim attenuato

prope angulos acutos anticos tenuissimo, supra æqualiter subsparsim punctulato; elytra medio valde rotundato-dilatata, sicut in *P. obesa* punctulata. Processus sternalis validior oblique descendens.
Long. 27–28 millim. ♀.

Hab. Mexico [1], Cordova (*Sallé*).

Two examples, both females. This species bears the name *P. lacordairei* in the Sallé collection.

4. **Phalangogonia parilis.** (Tab. XVII. fig. 4.)

Minor, paullo angustius ovata, fulvo-testacea, nitida, subtus cum pedibus piceo-nigra; clypeo angustius quadrato, confluenter punctato, margine antico arcuato, angulis distinctis sed valde obtusis, fronte sparse punctato punctis minutissimis intermixtis; thorace medio angulatim dilatato, sparse punctato et subtiliter punctulato prope latera scabroso-punctato, margine laterali usque ad angulos incrassato; elytris conspicue juxta costas lineatim punctatis; pygidio crebre striguloso-punctato, subopaco. Processus sternalis mediocriter elongatus, horizontalis. Tibiæ anticæ bidentatæ.
Long. 20–22 millim.

Hab. Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

Among the numerous examples examined no sexual differences can be detected. In all, the major claw is forked at the apex in all the tarsi. Some examples, which may be males, have a rather shorter and more quadrangular clypeus than the others.

5. **Phalangogonia championi.** (Tab. XVII. fig. 5.)

Oblonga, sat robusta, nigra, nitida, vertice et basi suturaque elytrorum prope scutellum fulvis (raro toto nigra), subtus (pectore densius) griseo-hirta; clypeo mediocriter transverso, omnino confluenter punctato, margine antico valde arcuato, fronte sat dense vertice sparsius punctato punctis minutis intermixtis; thorace medio valde subangulatim dilatato, margine laterali passim crasso, conspicue punctato, dorso sparsim versus latera densius confluenter strigoso-punctato; elytris sparse sed conspicue, apud costas lineatim, punctatis; pygidium densissime undulato-strigulosum, breviter apice longius setosum; pectus et abdominis latera minute dense punctulata. Processus sternalis conicus, minus elongatus. Tibiæ anticæ tridentatæ, dente superiore interdum obsoleto.
Long. 23–25 millim.

Hab. Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

Seven examples, apparently all females. The tarsal claws are rather small and slender, and the major claw is not longer or thicker than the other, but is forked at the apex.

PLATYCŒLIA.

Platycœlia, Burmeister, Handb. der Ent. iv. 1, p. 452 (1844).

A genus characteristic of the elevated regions of tropical South America, whence twelve species have been described and many more exist unnamed in collections.

1. **Platycœlia humeralis.** (Tab. XVII. fig. 8.)

Oblongo-ovata, æqualiter et valde convexa, dilute pomaceo-viridis (ventro sternoque interdum nigris), thoracis margine anguste, scutello elytrisque margine laterali, flavis, his interstitiis alternis flavo-viridibus; tarsis,

antennis et palpis fulvis; clypeo densissime ruguloso-punctulato, fronte et thorace subtilissime punctulatis, punctis majoribus intermixtis; thorace brevi, lateribus cum angulis posticis valde rotundatis, basi medio lobo rotundato, et utrinque late et profunde sinuato; elytris striato-punctatis, punctis versus latera solum impressis, interdum nigricantibus, humeris prominulis crasse marginatis, basi intra humerum breviter sinuato; pygidio lævi, punctis magnis nonnullis piliferis; pectore, coxis femoribusque parce griseo-hirtis. Processus sternalis valde elongatus. ♂. Tarsi antici ungue majore elongato, gracili apice fisso, cæteris tarsis furcatis. ♀. Ungues majores toti furcati.

Long. 26–30 millim. ♂ ♀.

Hab. Mexico, Coatepec (*Flohr*); Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

In colour and sculpture this species answers to the description of *P. nervosa*, Kirsch; but it evidently belongs to a different section of the genus, being of oblong form with the convexity of the elytra continuing to the apex, Kirsch's species being widened and flattened behind. The prominence of the shoulders is variable; in some few examples they are rectangular—this is the case with the single Mexican specimen sent to me by Mr. Flohr. I have examined about fifty examples.

Mr. Champion found a large number of this species about the banks of a lagoon in the dense forest; these had no doubt been blown into the water by the wind, many being submerged or dead. A specimen from the Volcan de Chiriqui is figured.

SPODOCHLAMYS.

Spodochlamys, Burmeister, Handb. der Ent. iv. 2, p. 529 (1855).

Two species of this peculiar genus have been described, both from tropical South America.

1. **Spodochlamys cupreola.** (Tab. XVII. fig. 10.)

S. cæsareæ affinis; angustius oblonga, elongata, supra fusco-cuprea subopaca; capite thoraceque æqualiter densissime punctatis, clypeo semiovato, margine parum reflexo; thorace brevissimo, margine laterali grosse irregulariter crenato, angulis anticis prolongatis, acutis; elytris undique sub lente minutissime punctulatis punctis sparsis majoribus intermixtis, apice suturali dentiformi; subtus æneo-cuprea, nitida, pectore fulvo-hirto; tibiis grosse punctatis; labro clypeoque subtus lætius cupreis. Tibiæ anticæ tridentatæ. Tarsi unguibus majoribus apice furcatis.

Long. 27 millim. ♀.

Hab. Panama, Chiriqui (*Trötsch*).

One example only.

Subfam. *GENIATINÆ*.

BOLAX.

Bolax, Fischer de Waldheim, Bull. Moscou, i. p. 45 (1829); Lacordaire, Gen. Col. iii. p 382; Burmeister, Handb. der Ent. iv. 1, p. 485.

Loxopyga, Westwood, Guérin's Mag. Zool. t. 72 (1833).

Twenty species of this genus have been described, all from tropical South America.

The two following, the first recorded from north of the Isthmus of Panama, are among the largest and finest species of the genus.

1. **Bolax magnus.** (Tab. XVII. fig. 6.)

B. andicolæ (Burm.) affinis, tibiis posticis gracile suratis. Major, elongatus, postice dilatatus, niger, nitidus, abdomine elytrisque fulvo-testaceis, his utrinque plus minusve distincte fusco-trivittatis; capite cum thorace sparse umbilicato-punctato; clypeo brevi et lato, obtusissime rotundato; thorace ante medium angulatim dilatato, postice sinuatim mediocriter angustato, angulis posticis rectis, anticis acutis, dorso medio æqualiter convexo, lateribus antice et postice transversim depressis; elytris punctato-striatis, interstitiis alternatim sparsius et densius punctatis, punctis nonnullis transversim confluentibus; pygidio grosse sed haud profunde sparsim transverso-punctato.

Long. 15–21 millim. ♂ ♀.

Hab. Panama, Bugaba 1000 feet, Volcan de Chiriqui 2000 feet (*Champion*).

Found in abundance by Mr. Champion in the forest-region of Chiriqui.

2. **Bolax flaveolus.** (Tab. XVII. fig. 7.)

B. magno proxime affinis; *B. andicolæ* quoad colores similior, sed differt metasterno flavo elytrisque nullo modo sulcatis. Ochraceo-testaceus, capitis thoracisque marginibus nigro-fuscis, capite infra cum partibus oris, pedibus totis, mesosterno et metasterni episternis nigris nitidis; capite, clypeo et thorace sicut in *B. magno* elytrisque sat crebre transversim punctato-rugulosis; pygidio grosse sed haud profunde sparsim transverso-punctato.

Long. 15–20 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Belt, Janson*).

Eight examples.

LEUCOTHYREUS.

Leucothyreus, MacLeay, Horæ Ent. i. p. 145 (1819); Burmeister, Handb. der Ent. iv. 1, p. 493 Lacordaire, Gen. Col. iii. p. 384.

Aulacodus, Eschscholtz, Entomographien, p. 76 (1823).

Bolaxoides, Castelnau, Hist. Nat. Ins. Col. ii. p. 140 (1840).

Similar in distribution to *Bolax*, but extending further southwards to the banks of the Plata. One species has been recorded from Tahiti. The described species amount to upwards of fifty.

1. **Leucothyreus femoratus.** (Tab. XVII. fig. 9.)

Leucothyreus femoratus, Burm. Handb. der Ent. iv. 1, p. 497 [1].

Hab. Mexico, Jalapa (*Höge*); Costa Rica (*Adams*); Panama, Volcan de Chiriqui, Caldera, Tolé (*Champion*).—South America, Venezuela [1].

The hind femora of the male are described by Burmeister as having at the base a high projecting keel. In the numerous examples I have examined this is a broad triangular tooth, slightly reflexed and margined. The size is 10 to 11 millim.

A Chiriqui specimen is figured.

GENIATES.

Geniates, Kirby, Trans. Linn. Soc. xii. p. 401 (1818); Burmeister, Handb. der Ent. iv. 1, p. 506; Lacordaire, Gen. Col. iii. p. 386.

This genus is nearly confined to Southern Brazil, twenty-nine out of the thirty-two species described being from that region. Of the other three one is from Monte Video, one from Colombia, and the third from New South Wales. The locality of this last rests on the same authority as that of Tahiti for a species of *Leucothyreus*, viz., Boheman, in the 'Voyage of the Eugenia.' The species are nearly all of large size except the following, which is an inconspicuous form connecting the genus with *Leucothyreus*, and smaller than the average of the *Leucothyrei*.

1. **Geniates spinolæ.**

Geniates spinolæ, Burm. Handb. der Ent. iv. 1, p. 508[1].

Hab. Panama (*coll. Bates*).—South America, Colombia[1].

Fam. **DYNASTIDÆ.**

Subfam. *CYCLOCEPHALINÆ.*

ASPIDOLEA.

Corpus oblongum. Caput magnum; clypeo maximo, transversim quadrato, antice haud angustato, angulis rotundatis, margine antico recto minime reflexo. Mandibulæ quam clypeus multo breviores, tenuiter laminatæ, basi intus rotundatæ, apice gradatim acuminatæ, intus ciliatæ. Maxillæ lobo rotundato laminiformi, apice longissimo et dense penicillatæ, omnino inermes. Mentum breve transversum, late cordiforme, apice late sinuata et ciliata, parte ligulari utrinque apud angulos distincta, dilatata. Pedes præcipue tibiæ posticæ graciles; tarsi postici articulo primo extus apice paullo producto. Cætera sicut in *Cyclocephala*.

The species on which this genus is founded differs but little in facies from *Cyclocephalæ* of similar slender form and uniform coloration, but its many structural peculiarities necessitate its removal from that group. The unarmed maxillæ are unarmed in a widely different manner from those of *Ancognatha scarabæoides* and its immediate allies, where they remain elongate and robust, though destitute of teeth; it more nearly approaches the form existing in *C. fuliginea*, in which, however, the upper inner angle of the shortened lobe is armed with two strong teeth. It is possible, judging from the description, that *C. pelioptera* and *C. clypeata* (Burm.) belong to *Aspidolea*.

1. **Aspidolea singularis.** (Tab. XVII. fig. 11, ♂.)

Gracilis, oblongo-ovata, fulvo-testacea, vertice nigro, subtus castaneo-fusca vel nigra, abdomine apice et pygidio rufis, pedibus castaneo-fuscis vel rufis; clypeo confluenter punctulato; thorace punctato, angulis posticis rotundatis; elytris subtiliter punctulato-alutaceis, sericeo-nitentibus, striisque geminatis et interspatiis punctatis; pygidio sparsim punctato, nitido, ♂ postice valde convexo, ♀ medio declive; pectore nudo, nitido. ♂. Tarsi antici ungue majore profunde fisso, dente superiore sat robusto.

Long. 15–17 millim. ♂ ♀.

Hab. Guatemala, Volcan de Atitlan (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

A Guatemalan specimen is figured.

ANCOGNATHA.

Ancognatha, Erichson in Wiegm. Archiv für Naturg. 1847, p. 97.
Cyclocephala, § 2 (*Cyclocephalæ acutæ*), Burmeister, Handb. der Ent. v. p. 39 (1847) (partim).

This genus has been too hastily rejected by authors subsequent to Erichson. Its structural differences from *Cyclocephala* are of much significance. The labrum is detached and inclined from the roof of the mouth, instead of being hidden as in *Cyclocephala* with at most a very short margin exposed under the clypeus, and its apex in the typical species is toothed; and the ligula is divided into two narrow lobes with a narrow depression at its base extending far down the mentum.

These characters, though the form of the mentum was incomprehensibly misstated, apply to Erichson's type, *A. scarabæoides*, and to *C. ustulata* and *C. humeralis* of Burmeister, but not to *C. ocellata* and *C. maculata*, which the latter author includes in the same section. They apply also in all probability to *A. lutea* of Erichson, and to *A. jamesoni* and *A. crassimana* of Murray, and without doubt also to *C. manca* of Leconte. The acuminated clypeus and the narrow pointed mandibles bent upwards from the edge of the clypeus are characters less distinctive of the genus, being shared by species of the first section of *Cyclocephala*; the clypeus is inconstant in shape, that of the female of *A. quadripunctata* being obtusely semiovate.

1. **Ancognatha æquata.** (Tab. XVII. fig. 12, ♂.)

A. scarabæoidi proxime affinis; supra complanata, piceo-nigra, nitida, corpore subtus, pygidio et femoribus fulvo-testaceis, ventre segmentis 1°–5^{m} medio infuscatis, pectore rufo-hirto; capite sparsim thorace multo subtilius et sparsius punctulatis, clypeo apice minus acuto et parum reflexo; elytris fere toto lævibus, medio versus basin tantum striato-punctulatis, stria suturali nulla. Pygidium setifero-punctulatum. ♂. Tarsi antici articulo unguiculari parum incrassato, ungueque majore elongato sat gracili.
Long. 18 millim. ♂.

Hab. Mexico, Ciudad in Durango (*Forrer*).

Two male examples.

2. **Ancognatha lævigata.**

A. scarabæoidi simillima, paullo convexior, corpore toto cum pedibus nigris, antennis palpisque rufis; elytris parum conspicue striato-punctulatis; pygidio polito, fere lævi, punctulis paucis setiferis.
Long. 17–19 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*), Tenancingo (*Flohr*).

Two examples. The clypeus curves on each side gradually to a point, but the point,

as in *A. æquata*, is much less produced and reflexed than in *A. scarabæoides*. I have adopted the MS. name given to the species by Sturm.

3. **Ancognatha humeralis.** (Tab. XVII. figg. 13, ♂; 14, ♀, var.)

Cyclocephala humeralis, Burm. Handb. der Ent. v. p. 40[1].

Hab. Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion, Trötsch*).—South America, Colombia[1], Venezuela, Ecuador, Peru.

In specimens from southern localities the black spots of the elytra appear to be two only in number, and small; in those from Chiriqui the spots are often greatly developed and increased in number, forming black streaks near the suture and sides and on the disc; in some examples the whole disc of the elytron is black. The hair-fringe beneath joints 1–4 of the hinder tarsi is dense but not very long. The apical tooth of the labrum is well-developed.

In the female the marginal callus of the elytra is extremely prominent, and forms a projecting lobe.

We figure a male example from Costa Rica, and a female from the Volcan de Chiriqui.

4. **Ancognatha manca.**

Cyclocephala manca, Leconte, Proc. Ac. Phil. 1866, p. 382[1]; Horn, Trans. Am. Ent. Soc. 1871, p. 335.

Hab. North America, Arizona[1].—Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

A single male example, without tarsi.

5. **Ancognatha quadripunctata.** (Tab. XVII. fig. 15, ♂.)

A. humerali simillima, sed differt thorace ♂ latissimo, convexo, et elytris ♀ sine callo laterali. Flavo-testacea, nitida, elytris callo humerali maculaque utrinque prope scutellum, femoribus tibiisque apicibus, nigris; capite et thorace sparsissime et subtiliter punctulatis, clypeo ♀ antice obtuse rotundato, fronte subbituberculata; elytris parum distincte striato-punctulatis. Pygidium ♂ pilifero-punctatum, ♀ fere læve. Tarsi 4 posteriores ♂ articulis 1°–4^{m} subtus longe et dense ciliatis.

Long. 20–26 millim.

Hab. Mexico (*Sallé, ex coll. Sturm*), Peras, Capulalpam (*Sallé*), Mexico city (*Höge*).

Five examples.

In the absence of a lateral callus to the elytra in the female the species resembles *A. ustulata*; but in the latter the margin on the site of the callus is a little expanded, which is not the case in *A. quadripunctata*. I have adopted the name given to the species by Sturm in the Sallé collection and in his published catalogue.

CYCLOCEPHALA.

Cyclocephala, Latreille, Règne Anim. ed. 2, 2. iv. p. 552 (1829); Burmeister, Handb. der Ent. v. p. 36; Lacordaire, Gen. Col. iii. p. 398.

A genus peculiar to America*, and spread over the temperate and tropical zones from north to south, including the islands of the West Indies, where it is numerously represented. About one hundred species have been described.

Many species of this genus are constantly to be found in the spathes of Arums; and they are often to be met with in numbers deeply imbedded in the viscous pollen at the bottom of the spathe, in company with elongate forms of Nitidulidæ (*Champion*).

I. *Clypeus elongatus, interdum latus vel apice sinuatus; ligula late divaricato-lobata mentoque late emarginato.*

1. Cyclocephala signata.

Melolontha signata, Drury, Ill. Ins. i. p. 82, t. 36. fig. 6; ii. Append. Ind. (1773) [1].
Cyclocephala signata, Burm. Handb. der Ent. v. p. 43 [2].

Hab. British Honduras, Cayo (*Blancaneaux*); Nicaragua, Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, David (*Champion*).—South America, Colombia, Venezuela, Peru; West Indies [1 2].

The excellent description of Burmeister renders it easy to identify this species as regards the male. The female may be distinguished from the same sex of the allied species of similar shape and colour by the form and position of the elytral callus, it being situated much behind the middle, and the margin near it is strongly sinuated and depressed, the depression terminating behind with the projecting angular end of the lower edge of the epipleural fold.

Found in enormous profusion by Mr. Champion, on the savannas near David, in sappy rotten Agaves.

2. Cyclocephala collaris (?).

Cyclocephala collaris, Burm. Handb. der Ent. v. p. 47 [1] (?).

Hab. British Honduras, Cayo (*Blancaneaux*); Guatemala, Panzos (*Champion*).—South America [1], Ecuador (*Whymper, in coll. Bates*).

I refer this species doubtfully to *C. collaris*, Burm., as he does not fully describe the callus and elytral dilatation of the female, which, so far as this sex is concerned, is the

* A species has been described by Montrouzier from Woodlark Island in the Western Pacific, but this author is so notoriously inaccurate in his generic determinations that we may fairly assume an error has been made in this instance.

only definite character which separates the species from *C. signata*. The three examples before me are females, which renders more difficult the determination of the species; the one from Ecuador, however, exactly agrees in colour with Burmeister's description. The elytral callus is on the dilated margin, and near to the outer apex; close to it the surface is depressed, and anterior to it the margin is thickened.

3. **Cyclocephala detecta.** (Tab. XVII. fig. 16, ♂.)

C. stictícæ similis, sed differt clypeo (lato subquadrato) antice cum angulis rotundato, supra creberrime subtiliter punctulato margine antice reflexo, fronte et vertice paullo sparsius punctulatis, illo utrinque punctis setiferis majoribus. Elongata (thorace amplo rotundato), flavo-testacea, polita; vertice, thorace vittis duabus elytrisque utrinque maculis duabus vel tribus (2 vel 1 anticis, 1 postica, macula anteriore interiore valde obliqua), abdomine cum pygidio nigro-fuscis; thorace disco sparsissime punctulato, lateribus (præcipue versus angulos anticos) grosse sed sparsim setifero-punctatis; elytris subtiliter punctulatis punctis majoribus sparsis setiferis, striisque geminatis juxta costas. Pygidium convexum, longe fulvo-setosum.
Long. 16 millim. ♂.

Hab. Mexico, Orizaba, Chiapas (*Sallé*); Nicaragua (*ex coll. Cutter*).

Two Mexican specimens in the Sallé collection are labelled *C. stictica*, Burm., from the other male examples of which in the same collection they differ in the broader, obtusely-square form of the clypeus, and in the absence of apical sinuation, and the fine and close sculpture, which renders the surface of the clypeus opaque. In these respects the species comes nearer to the South-Brazilian *C. variabilis*, Burm., from which in fact *C. detecta* differs only in the more broadly rounded thorax, the broader clypeus, and the more distinctly black-edged elytral suture. From *C. signata* it differs in the more ample clypeus and fine scattered punctuation of the disc of the thorax, besides being a larger insect. The male is further distinguished from the corresponding sex of both *C. variabilis* and *C. signata* by the third and fourth joints of the anterior tarsi being smooth, and not finely strigose.

We figure an individual from Chiapas.

4. **Cyclocephala stictica.** (Tab. XVII. fig. 17, ♂.)

Cyclocephala stictica, Burm. Handb. der Ent. v. p. 66 [1].

Hab. Mexico [1], Orizaba, San Andres Tuxtla (*Sallé*), Cordova, Misantla (*Höge*).

A good series of examples. Burmeister placed this species in a section far apart from that to which he referred *C. signata* and its allies, on account of its sinuated clypeus. This single character, which in some examples is only very slightly developed, ought not, I think, to outweigh the other numerous signs of close affinity. The lateral callus of the female is large and wholly superficial, leaving the elytral margin continuous and normal. The major claw in the male fore tarsi is entire.

A Misantla specimen is figured.

5. **Cyclocephala microspila.** (Tab. XVII. fig. 18, ♂.)

C. sticticæ valde affinis; minor, flavo-testacea, vertice elytris utrinque maculis duabus (interdum tribus) parvis nigris, thorace immaculato vel maculis 2 aut 4 vagis; clypeo subtiliter undulato-striguloso et punctulato, apice latius et distinctius sinuato, fronte disperse æqualiter punctata; thorace rotundato-quadrato, lateribus minus arcuatis, subtiliter disperse, versus latera parum grossius, punctato; elytris subtiliter punctulatis, breviter sparsim setosis. Pygidium ♂ valde convexum, punctatum et breviter setosum; ♀ longitudinaliter subcarinatum, convexum, fere lævе. Tarsi ungue majore integro. ♀. Elytra mox pone medium alte callosa et margine verticaliter arcuato, post callum depressa.

Long. 14–16 millim.

Hab. Panama, Bugaba, David (*Champion*).

The hind tarsi, as in the foregoing species, are very long, and in both sexes finely ciliated beneath. When there are only two elytral spots present (the most frequent case) it is the inner of the anterior pair that is deficient; sometimes the spots are very minute.

6. **Cyclocephala fasciolata.** (Tab. XVII. fig. 19, ♂.)

Oblonga, subconvexa, nigra, nitida, elytris (interdum partim opacis) macula irregulari transversa discoidali rufa vel toto nigris; capite disperse umbilicato-punctulato, clypeo sat elongato subquadrato antice rotundato; thorace sicut in *C. fuliginea*, sat elongato lateribus rotundatis (angulis posticis valde obtusis, anticis prolongatis acutis), sed differt basi integriter marginato et dorso distincte disperse punctato; elytris vage striato-punctatis, stria suturali haud impressa interstitioque suturali usque ad apicem lato lævique. Subtus cum pedibus rufo-hirta. Mandibulæ apice truncatæ, extus breviter dentatæ et intus bifidæ. Prosternum ante coxas valde convexum, rufo-hirtum.

♂. Tibiæ anticæ bidentatæ; pygidium rufo-hirtum. Tarsi postici quam tibiæ multo longiores, articulis 1°–4m subtus rufo-ciliatis.

♀. Tibiæ anticæ tridentatæ. Pygidium fere glabrum, politum. Elytra margine laterali fortiter callosa.

Long. 20–23 millim.

Hab. Mexico, Toxpam, Cordova (*Sallé*), Jalapa (*Höge*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion, Trötsch*).

An example from Toxpam is figured.

7. **Cyclocephala fuliginea.** (Tab. XVII. fig. 20, ♂.)

Cyclocephala fuliginea, Burm. Handb. der Ent. v. p. 42 [1].

Hab. Mexico (*Sallé*); Guatemala, Capetillo (*Champion*).—South America, Venezuela, Brazil [1].

Differs from the other species of the section in the maxillary lobe being short and subquadrate in form, and armed on its inner apex with two teeth, and in the narrower and more divergent lobes of the ligula.

A Mexican specimen is figured.

II. *Clypeus elongatus, semiovatus; ligula medio anguste incisa mentoque apice integro.*

8. **Cyclocephala complanata.** (Tab. XVII. fig. 21, ♂.)

Cyclocephala complanata, Burm. Handb. der Ent. v. p. 48 [1].

Hab. Mexico [1], San Andres Tuxtla (*Sallé*), Jalapa (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Capetillo, Zapote (*Champion*); Nicaragua, Chontales (*Belt*).

Mexican specimens have the elytra pale testaceous, with the suture and a very long, oblique, dorsal vitta on each elytron castaneous, or they are spotless; in those from Guatemala the dark castaneous pigment prevails, and the broadened oblique vitta sometimes coalesces with an equally widened sutural border, the outer margin also being castaneous. In the darker examples the thorax is red. The hind margin of the thorax has a continuous, deeply impressed groove. The marginal callus of the elytra in the female is obsolete, or exists only as a slightly raised spot distant from the margin, which latter is thickened (but straight) for a short distance.

An example from Jalapa is figured.

9. **Cyclocephala sanguinicollis.**

Cyclocephala sanguinicollis, Burm. Handb. der Ent. v. p. 49[1].

Hab. Mexico [1], Toxpam, Santecomapan (*Sallé*).

In form, colour, and sculpture, this species closely resembles *C. gravis*, which belongs to the section with sinuated clypeus. The female elytral dilatation differs, however, much from that of *C. gravis*, being much behind the middle, and accompanied by a small, narrow callus.

10. **Cyclocephala mutata.**

Cyclocephala mutata, Gemm. & Harold, Cat. Col. iv. p. 1243.

Cyclocephala frontalis, Burm. Handb. der Ent. v. p. 50[1] (1847) (nec Chevrolat in Icon. Règne Anim. p. 90 (1830); Ann. Soc. Ent. Fr. 1865, p. 30).

Hab. Mexico, Cordova (*Höge*), Playa Vicente, Campeche (*Sallé*), North Yucatan (*Gaumer*), Yucatan[1]; Costa Rica (*Sallé*, *Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Among the numerous unicolorous testaceous species with black crown, this is distinguished by its semi-ovate clypeus, variable in size, but smaller and relatively narrower than in *C. signata*, with the front edge sometimes almost obtusely truncated, but reflexed and without trace of emargination. The thorax is relatively much smaller than in *C. signata*, but the sides and hind angles are similarly rounded. The upperside is light yellowish, the underside generally more rufous. The male has long hind tarsi with long claws; the female is distinguished from the same sex of the allied species by the lateral margin of the elytra a little behind the middle being dilated, forming a lobular projection, near which the surface has a slight callosity. This is probably what Burmeister means by his phrase "Das weibchen zeigt de schmale randschwiele recht deutlich."

The specific name adopted by Burmeister was preoccupied by Chevrolat for an evidently very distinct Cuban species, the sole example of which, as Chevrolat records, was destroyed.

11. **Cyclocephala sororia.** (Tab. XVII. fig. 22, ♂.)

Cyclocephala cerea, Burm. Handb. der Ent. v. p. 51 ?

C. mutatæ proxime affinis, differt tantum corpore magis ovato, tarsis posticis ♂ cum unguibus paullo brevioribus, et præcipue ♀ elytris nec callosis nec margine dilatatis.

Long. 17–20 millim. ♂ ♀.

Hab. Mexico, Yolos (*Sallé*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Zapote, Capetillo (*Champion*); Costa Rica (*Sallé*, *Van Patten*).

The females of this species are readily distinguishable from those of the preceding by the lateral margin of the elytra being simple, like that of the male, except for the rather more thickened edge; there is no trace of the slight lobular projection or surface-callus. The males show no constant difference: all that can be said is that their general form is more ovate, and the hind tarsi, with their claws, when very attentively compared appear to be a little shorter. The colour is the same, but a good proportion of examples, especially from Guatemala, are very dull castaneous on the underside. The punctuation of the whole upper surface varies in both species, but it is nearly always very fine, and the sides of the forehead and thorax show no trace of the larger punctures which are so conspicuous in *C. signata* and its immediate allies. The pygidium in both species is glabrous and nearly smooth; but in *C. sororia* it is generally more highly polished and freer from punctuation than in *C. mutata*.

The species must be closely allied to the Jamaican *C. cerea*, Burm., but the description of the latter equally well applies to *C. epistomalis*.

A Costa Rican specimen is figured.

12. **Cyclocephala epistomalis.**

C. mutatæ et *C. sororiæ* simillima, sed differt clypei margine antico elevato et incrassato epistomateque declive vel fere horizontali. Elongato-ovata, convexa, fulvo-testacea, subtus cum pygidio piceo-nigra, nitida, capite nigro, femoribus rufo-testaceis; thorace sparsim subtiliter punctulato, angulis posticis mediocriter rotundatis; elytris sat dense punctulatis, striis geminatis flexuosis punctulatis utrinque duabus; pectore fulvo-piloso; pygidio polito, subtiliter pilifero-punctulato, ♀ leviter longitudinaliter convexo; prosterni processu postcoxali alto.

Long. 20 millim. ♀.

Hab. Guatemala (*Sallé*), Capetillo (*Champion*).

Two examples only, both females. In one the raised anterior margin of the clypeus is slightly sinuated, in the other it is rounded; the outline of the clypeus is semiovate only by including the anterior margin of the epistome. The affinities of *C. epistomalis* are with *C. mutata* of the present group, and not with *C. mafaffa* of the sinuated-clypeus group. The peculiarity in the form of the clypeus lies in the broad and very oblique posi-

tion of the front edge, which in all other species is vertical. The mandibles are normal, *i. e.* forming moderately narrow blades, with truncated apex and sinuated outer edge.

III. *Clypeus parvus; mentum apice rotundatum vel rectum, integrum.*

A. *Antennæ clava in ♂ valde elongata.*

13. **Cyclocephala immaculata.**

Melolontha immaculata, Oliv. Ent. i. 5, p. 29, t. 8. fig. 95 [1].

Cyclocephala immaculata, Burm. Handb. der Ent. v. p. 53 [2]; Horn, Trans. Am. Ent. Soc. 1871, p. 336 [3].

Cyclocephala lurida, Bland, Proc. Ent. Soc. Phil. 1863, p. 354 [4].

Hab. North America [2 3 4].—Mexico [3], Northern Sonora (*Morrison*), Villa Lerdo in Durango (*Höge*), Cordova (*Sallé*).—West Indies, Guadaloupe [1].

14. **Cyclocephala coahuilæ.** (Tab. XVII. fig. 23, ♂.)

C. immaculatæ affinis et simillima; differt elytris ♀ medio margine laterali rotundato-dilatato et incrassato. Flavo-testacea, vertice nigro, supra glabra; clypeo sicut in *C. immaculata* parvo, obtuse triangulari, ruguloso-punctato palpisque maxillaribus articulo ultimo cylindrico vix perspicue foveato; thorace sparsissime punctato, spatio dorsali lævi; elytris striato-punctatis; pygidio ♂ longe erecte piloso. Prosternum ante coxas obtuse carinatum, processu postcoxali alto apice lato obtuso. ♂. Antennæ clava cæteris articulis longiore. ♀. Antennæ clava elongata, cæteris articulis paullo breviore.

Long. 12-16 millim. ♂ ♀.

Hab. Mexico, Saltillo and Parras in Coahuila (*Dr. Palmer*).

Almost the only difference between this species and *C. immaculata* rests, as in *C. sororia* and *C. frontalis*, on a secondary sexual character, which must be of some systematic as it is of physiological importance. In the numerous female examples of *C. immaculata* examined from various localities the lateral margin of the elytra near the middle shows no trace of dilatation or thickening.

Five examples (three males, two females).

15. **Cyclocephala castaniella.** (Tab. XVII. fig. 24, ♂.)

C. immaculatæ affinis; oblonga, supra glabra, castaneo-fusca, clypeo, partibus oris, antennis et pedibus fulvo-castaneis; clypeo parvo, semi-ovato, ruguloso-punctato; thorace sparse, versus angulos posticos crebrius et grossius, punctato, antice gradatim angustato, angulis posticis rotundatis; elytris utrinque striis tribus grosse punctatis geminatis flexuosis, interstitiis punctatis, limbo posteriore minute punctulato; prosterno antice sat anguste carinato, processu postcoxali alto. ♂. Pygidium glabrum, margine fimbriato-punctulato; antennarum clava cæteris articulis conjunctis longiore; tarsi antici ungue majore apice fisso. ♀. Elytra pone medium gradatim dilatato-explanata ibique margine incrassato; pygidium glabrum, politum; antennarum clava sat elongata.

Long. 12–15 millim. ♂ ♀.

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*).

A large number of examples; without colour variation, except that the elytra in the females are sometimes dark brown with the sides, or vaguely-defined spots, reddish-castaneous.

16. **Cyclocephala curta.** (Tab. XVII. fig. 25, ♂.)

Breviter oblongo-ovata, flavo-testacea, glabra, vertice vix infuscato, elytris utrinque maculis vagis (haud vittis) castaneis (2 anterioribus, 1 posteriore, interdum minutis vel deficientibus); clypeo sicut in *C. immaculata*; thorace transverso, lateribus regulariter rotundatis, grosse sparsim punctato; elytris utrinque costulis 3 sat elevatis et striis punctatis delimitatis, interstitiis grosse ruguloso-punctatis. Pygidium glabrum et impunctatum. Ungues conspicue elongati. ♂. Tarsi antici ungue majore acuminato integro; antennarum clava elongata, cæteris articulis conjunctis fere æquali. ♀. Elytra apud medium leviter gradatim explanato-dilatata ibique margine mediocriter angustato.

Long. 11 millim. ♂ ♀.

Hab. Mexico, Tuxtla, Catemaco, Tehuantepec (*Sallé*). Four examples.

Bears the name *C. curta*, Deyrolle, MS., in the Sallé collection. A Catemaco specimen is figured.

B. *Antennæ clava in utroque sexu parva.*

a. *Clypeus breviter semiovatus.*

17. **Cyclocephala lunulata.**

Cyclocephala lunulata, Burm. Handb. der Ent. v. p. 62 [1].

Hab. Mexico, Presidio, Ventanas (*Forrer*), Monclova in Coahuila (*Dr. Palmer*), Orizaba, Cordova, Tuxtla, Playa Vicente, Chiapas, Campeche (*Sallé*), Jalapa, Misan a (*Höge*), North Yucatan (*Gaumer*); British Honduras, Cayo (*Blancaneaux*); Guatemala, Chacoj, Capetillo (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica, Volcan de Irazu 6000 to 7000 feet, Cache (*Rogers*); Panama, Bugaba (*Champion*).—South America to South Brazil [1].

Female examples agree exactly with others of the same sex, with which I have compared them, from the Amazons and South Brazil. The lateral margin of the elytra in the female is sinuated below the middle, followed by a dilatation, which gradually subsides behind, and there is an elongate narrow callus, sometimes only slightly indicated, near the margin. The characteristic postero-discoidal circumflex mark of the elytra is sometimes absent, and the elytra wholly testaceous.

18. **Cyclocephala fulgurata.**

Cyclocephala fulgurata, Burm. Handb. der Ent. v. p. 63 [1].

Hab. Mexico, Playa Vicente (*Sallé*).—South America, Colombia [1], Amazons.

Closely allied to the preceding, but distinguished generally by the zigzag posterior fascia of the elytra. The very different position of the lateral dilatation of the elytra in the female is a still more definite specific character; this is situated far behind, towards the apical curve, and is short and angular, with a smooth callus on the surface,

19. **Cyclocephala comata.** (Tab. XVIII. fig. 1, ♂.)

C. lunulatæ proxime affinis et similis, sed paullo oblongior, longe fulvo-pilosa et capite toto flavo. Oblongo-

ovata, corpore pedibusque longe fulvo-pilosis, flavo-testacea, thorace vitta abbreviata dorsali signaturaque X-formi utrinque discoidali, elytrisque sicut in *C. lunulata* utrinque litera angulata versus basin alteraque postica V-formi, interdum conjunctis vel fere obliteratis, castaneis; clypeo parvo, semi-ovato, margine antico valde reflexo ruguloso-punctato; thorace discrete punctato, angulis posticis rotundatis; elytris subtilius punctatis, striis geminatis parum perspicuis; pygidium convexum, crebre punctulatum et longissime erecte pilosum. Corpus subtus cum pedibus pilosum.

♂. Tarsi antici ungue majore valde elongato apice fisso, dente superiore tenuissimo. Palpi maxillares valde elongati. Mandibulæ sat angustæ extus valde sinuatæ, apice ultra clypeum porrecto supra et extus recurvato.

Long. 17 millim. ♂.

Hab. Mexico (*Sallé, ex coll. Sturm*), Peras (*Sallé*).

Three examples only, all males. Bears the MS. name *C. ochreata*, Sturm.

20. Cyclocephala ——?

Hab. Mexico, Playa Vicente (*Sallé*).

A single example apparently distinct, but imperfect and discoloured.

b. *Clypeus apice recte truncatus, reflexus, angulis distinctis.*

21. Cyclocephala dimidiata.

Cyclocephala melanocephala, var. (?) *dimidiata*, Burm. Handb. der Ent. v. p. 57 [1].
Cyclocephala elegans, Horn, Trans. Am. Ent. Soc. 1871, p. 337, t. 3. fig. 34 [2].
Cyclocephala dimidiata, Horn, loc. cit. 1875, p. 143.

Hab. North America, Lower California [2].—Mexico [1], Toxpam, Cordova, Chiapas (*Sallé*), Villa Lerdo in Durango, Coatepec, Acapulco, Jalapa (*Höge*); Guatemala, Aceytuno 5100 feet (*Salvin*), Capetillo, Pantaleon (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Chiriqui (*Ribbe*), Bugaba, San Miguel in the Pearl Islands (*Champion*).

22. Cyclocephala guttata. (Tab. XVIII. fig. 2, ♀.)

Elongato-ovata, subcylindrica, subtus rufo-testacea vel partim nigro-castanea, supra flavo-testacea, vertice nigro, thoraceque guttis rotundis 4 transversim seriatis, scutello castaneo; clypeo parvo, subtrapezoidali vel semiovato, antice truncato, margine antico reflexo, antice lævi postice cum fronte punctato; thorace sat grosse discrete punctato, angulis posticis rotundatis; elytris sat grosse striato-punctatis, interspatiis subruguloso-punctatis; pygidium glabrum, ruguloso-punctatum, paullo convexum. Elytra ♀ margine laterali simplici.

Long. 9–11 millim. ♀.

Hab. Mexico, Playa Vicente (*Sallé*); Guatemala, Yzabal (*Sallé*).

Three examples only, all females.

23. Cyclocephala ovulum. (Tab. XVIII. fig. 3, ♂.)

C. minutæ (Burm.) similis, brevis sat regulariter ovata, flavo-testacea (subtus rufiore), vertice nigro, pygidio (♂ ♀) dense punctulato-ruguloso sive alutaceo opaco; clypeo parvo, trapezoidali, margine antico reflexo;

thorace sparsim punctato, angulis posticis mediocriter rotundatis; elytris grosse haud dense striato-punctatis, margine laterali (♂ ♀) ante medium sinuato et post hoc paullo dilatato, limbo laterali impunctato; tibiis anticis dentibus tribus validis, nigris; pygidio (♂ ♀) parum convexo. ♂. Tarsi antici ungue majore valde elongato, apice anguste fisso. ♀. Elytra prope dilatationem callosa margineque paullo incrassato.

Long. 9-11 millim. ♂ ♀.

Hab. Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*); Panama, David (*Champion*).—South America, R. Amazons.

A large number of examples. In colour, and especially in the sculpture of the pygidium, agrees with Burmeister's description of *C. testacea*; but Burmeister places *C. testacea* in his subsection "body elongate cylindrical," whereas our species is quite remarkably short and rotundate-ovate. His description of the claw-joint of the anterior male tarsi, "mässige verdickt," is also inapplicable, as our species has the claw-joint very unusually large and thickened, with the larger claw of extraordinary length and stoutness. The closely allied *C. minuta* (found also on the Amazons) is a smaller insect, 7 millim., and has a coarsely punctured shining pygidium. A Chontales specimen is figured.

IV. *Clypeus latus, antice sinuatus; mentum ante palpos angustum, subrotundatum, antice medio plerumque anguste incisum.*

24. **Cyclocephala lucida.** (Tab. XVIII. fig. 4, ♂.)

Cyclocephala lucida, Burm. Handb. der Ent. v. p. 67 [1].

Hab. Mexico [1], Orizaba, Santecomapan (*Sallé*), Cordova, Jalapa (*Höge*); Guatemala, Zapote (*Champion*); Nicaragua (*Sallé*), Chontales (*Belt, Janson*); Panama, David (*Champion*).

Distinguished by the elytra having together eight black spots arranged in a circle, of which the two nearest the scutellum are the largest. The black spots on the thorax are more variable in form and number, and in many examples disappear without corresponding diminution of the elytral spots. The largest examples and those with the largest black spots occur in Mexico. In specimens from Guatemala and further south the spots are generally smaller and the general form of the insect more slender and paler in colour, but large-spotted examples, though rarer, occur in Guatemala, as small-spotted ones do in Mexico. The female is distinguished by the lateral margin being abruptly produced into a small lobe a little behind the middle, the surface of the elytron between the lobe and the slightly elevated callus being depressed. Found commonly by Mr. Champion in the spathes of large Arums at Zapote. A specimen from Orizaba is figured.

25. **Cyclocephala amblyopsis.** (Tab. XVIII. fig. 5, ♂.)

C. lucidæ proxime affinis, sed minor et angustior, flavo-testacea, nitida, vertice cum fronte thoracis maculis duabus elytrorumque macula utrinque prope scutellum (rarissime macula parva discoidali versus apicem)

nigris; variat elytris vel elytris et thorace immaculatis; clypeo quam in *C. lucida* apice latiore et minus sinuato, interdum obtuse truncato, cum fronte sparse punctato; thorace subtilius punctato elytrisque subtiliter sat sparsim præcipue lineatim punctulatis. ♂. Tarsi antici ungue majore apice lato fisso; pygidium versus apicem convexum, sparse punctulatum, apice ciliatum; antennæ breves, clava parva. ♀. Pygidium longitudinaliter haud convexum, punctulatum. Elytra post medium callo ovato margineque vicino anguste lobato-producto.

Long. 16–19 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*), Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Var. *C. monochroa*: vertice nigro excepto, toto flavo- vel rufescenti-testacea; cætera ut in *C. amblyopsis*.

Hab. Guatemala, Zapote (*Champion*); Nicaragua; Costa Rica.

A large number of examples of both type-form and variety; the latter requires a distinct name on account of the peculiarity of its distribution, all the numerous examples from Zapote belonging to it, whilst further south the spotted type-form prevails mingled with very few individuals of *C. monochroa*. An example from Chontales is shown on our Plate.

26. **Cyclocephala gravis.**

C. lucidæ affinis; minor, rufo-castanea, polita, vertice nigro elytrisque flavo-testaceis; clypeo fere sicut in *C. lucida*, sed apice magis sinuato, arcuato-punctato; sutura frontali acute impressa, flexuosa; thorace conspicue punctato; elytris sat dense punctulatis et seriebus punctulorum utrinque geminatis quatuor, sutura rufescenti. ♂. Pygidium valde convexum, punctulatum, disco posteriore læviore; tarsi antici ungue majore fisso; antennæ cum clava breves. ♀. Pygidium fere sicut in ♂ convexum; elytra a ♂ parum diversa, haud callosa, apud medium gradatim leviter dilatata ibique margine paullulum incrassato, post dilatationem angustata.

Long. 17–18 millim. ♂ ♀.

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Coban (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Panama, Bugaba (*Champion*).—South America, Venezuela.

A large number of specimens offering scarcely any variation. I have adopted the MS. name *C. gravis* which the species bears in the Sallé collection. Venezuelan examples were sent to me some years ago from Paris under the name *C. concolor*, Burm.: this is a very different and much larger species belonging to the group in which the clypeus is elongate, semiovate, and entire.

27. **Cyclocephala mafaffa.** (Tab. XVIII. fig. 6, ♂.)

Cyclocephala mafaffa, Burm. Handb. der Ent. v. p. 69[1].

Hab. Mexico[1], Orizaba, Cordova, Etla (*Sallé*), Jalapa (*Höge*); Guatemala (*Sallé*), Zapote, Las Mercedes (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Rogers*).

A Mexican specimen is figured.

28. **Cyclocephala picta.** (Tab. XVIII. fig. 7, ♂.)

Cyclocephala picta, Burm. Handb. der Ent. v. p. 68 [1].

Hab. Mexico [1], Orizaba (*Sallé*).

29. **Cyclocephala conspicua.** (Tab. XVIII. fig. 8, ♂.)

Cyclocephala conspicua, Sharp, Journ. Linn. Soc., Zool. xiii. p. 135 [1].

Hab. Nicaragua, Chontales (*Belt* [1], *Janson*).

30. **Cyclocephala atripes.** (Tab. XVIII. fig. 9, ♂.)

Brevius oblongo-ovata, fulvo-testacea, capite toto, elytrorum margine angusto basali et laterali (prope humeros), pectore lateribus pedibusque toto, nigris, palpis antennisque piceo-rufis; clypeo transversim quadrato, apice late sinuato; thorace brevi et lato, disperse punctato; elytris utrinque striis punctatis geminatis tribus, interspatiis minutius et crebrius punctulatis, versus basin et suturam punctis majoribus intermixtis. ♂. Pygidium mediocriter convexum, setifero-punctatum.

Long. 17 millim. ♂.

Hab. Nicaragua, Chontales (*Janson*).

Two males only.

31. **Cyclocephala ligyrina.** (Tab. XVIII. fig. 10, ♂.)

C. variolosæ (Burm.) affinis, sed robustior thoraceque basi haud marginato. Oblonga, convexa, postice paullo ampliata, piceo-rufa vel nigra unicolor; capite cum clypeo paullo convexo, sparse punctulato, clypeo antice paullo angustato, angulis rotundatis, margine apicali sinuato; thorace sparse punctato, lateribus leviter usque ad angulos obtusissimos posticos rotundatis; elytris utrinque striis punctatis geminatis tribus, interspatiis et limbo lato laterali confuse punctatis, punctulis minutis intermixtis, punctis majoribus circularibus et umbilicatis; pygidio sat regulariter subdense punctato. Mandibulæ fere sicut in *C. mafaffa*, sed extus minus sinuatæ; ligula angusta, subconcava, margine antico rotundato et leviter inciso; tibiæ anticæ dentibus 3 robustis prope apicem approximatis. ♂. Tarsi antici articulo unguiculari cum ungue majore valde incrassato, hoc apice fisso; tarsi postici nec elongati nec subtus ciliati; pygidium parum convexum. ♀. Pygidium longitudinaliter haud convexum; elytra margine laterali a basi usque longe ultra medium gradatim dilatato et incrassato, subito terminato, striaque marginali profunda.

Long. 25–26 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Belt*); Panama, Chiriqui (*Trötsch*).

Three examples. This species very closely resembles the South-Brazilian *C. variolosa*, the female of which has a similarly thickened and to beyond the middle gradually widened lateral margin; but the latter is strikingly distinguished by the uninterrupted basal margin of the thorax, a most unusual character in the genus *Cyclocephala*.

32. **Cyclocephala proba.** (Tab. XVIII. fig. 11, ♀.)

Cyclocephala proba, Sharp, Journ. Linn. Soc., Zool. xiii. p. 135 [1].

Hab. Nicaragua, Chontales (*Belt* [1]).

Similar in colour and sculpture to the preceding, but a relatively shorter insect, and differing in the broader and more quadrate form of the clypeus. It is a more aberrant

species, the sides of the thorax being sinuated behind to the distinct though obtuse hind angles, and the mandibles differing from those of *C. mafaffa* and allies in being gradually narrowed to the apex. The sides of the elytra in the female are simple, as in the males of the genus.

33. **Cyclocephala melane.**

Oblonga, mediocriter convexa, nigra, nitida, antennis palpisque rufo-piceis; clypeo sat elongato trapezoidali, angulis anticis rotundatis, margine antico sinuato, haud dense ruguloso, fronte grosse punctata spatiis lævibus; thorace sparsissime punctulato, antice et lateribus punctis nonnullis grossis setiferis, basi acute marginato angulisque posticis distinctis sed obtusis, lateribus versus angulos posticos parum rotundatis; elytris sat grosse et regulariter punctato-striatis, versus latera et apicem lineatim setifero-punctatis; pygidio (♂) convexo, punctato et longe rufo-piloso. Prosterni processus postcoxalis tuberculo supra magno rotundato. Mandibulæ quam clypeus haud breviores, apice extus hamatæ. Mentum sicut in *C. mafaffa*, antice angustato ligula apice rotundata. Antennæ 10-articulatæ. Tibiæ anticæ dentibus approximatis apicalibus duobus; tarsi antici (♂) ungue majore fisso.

Long. 22 millim. ♂.

Hab. Costa Rica (*coll. Bates*).

One male example. Allied to *C. variolosa*, Burm., with which it agrees in the margined base of the thorax; but it is more parallel-sided and of a deeper black colour, and the clypeus is longer. It deceptively resembles at first sight *C. nigerrima*, from which it differs so greatly in the length of the mandibles and in the form of the ligular part of the mentum.

V. *Clypeus antice sinuatus vel triflexuosus; mentum apice latissimum, recte truncatum.*

34. **Cyclocephala nigerrima.** (Tab. XVIII. fig. 12, ♂.)

Elongata, oblongo-ovata, nigerrima, polita, pectore, pedibus abdominisque lateribus haud dense vulpino-pilosis; clypeo magno subquadrato, antice leviter angustato, angulis distinctis, margine antico mediocriter reflexo, subsinuato, cum vertice sparsim punctulato; thorace subtilissime et sparsissime punctulato, angulis posticis distinctis sed obtusissimis, basi emarginato; elytris plerumque fere lævibus politis, interdum punctulatis et geminato-striatis. ♂. Pygidium convexo, sat fortiter discrete setifero-punctato; tibiæ anticæ tridentatæ, dente superiore parvo et subremoto; tarsi antici ungue majore profunde fisso. ♀. Pygidium recte declive punctatum, glabrum; tibiæ anticæ acute tridentatæ; elytra medio gradatim leviter dilatata ibique margine incrassato. Mandibulæ quam clypeus multo breviores, apice obtuse acuminatæ. Ligula lata, subconcava, apice fere recta.

Long. 22–25 millim. ♂ ♀.

Hab. Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet, R. Sucio (*Rogers*).

A large number of examples. Closely allied to the following, *C. ampliata*, notwithstanding the different outline of the clypeus. Although coming within the definition of Burmeister's section "Cyclocephalæ sinuatæ" the sinuation of the clypeus is different from that of *C. mafaffa* and its allies, being a gradual incurvation from angle

to angle with the angles well-marked, instead of being a curved sinus in the middle with the angles rounded. The mandibles are remarkably small and much shorter than the clypeus; on dissection they are found to be closely applied to the roof of the mouth.

35. **Cyclocephala ampliata.**

Robusta, præcipue elytris late quadrato-ovatis, castaneo-rufa, polita, elytris (sutura excepta) fulvis; clypeo magno subquadrato, antice perparum angustato, angulis anticis acutis margineque antico acute reflexo valde flexuoso; thorace quam elytra multo angustiore, rotundato convexo, angulis posticis distinctis sed obtusissimis, basi marginato, toto sparsim punctulato; elytris subtilissime sparsim punctulatis et geminato-striatis; pygidio convexo, sat dense setifero-punctato. ♂. Tibiæ anticæ apice acute bidentatæ, denteque tertio subobsoleto supra remoto; tarsi antici ungue majore fisso; mandibulæ quam clypeus multo breviores, acuminatæ, haud recurvæ. Ligula late concava, antice leviter rotundata, integra. Antennæ 10-articulatæ.

Long. 23 millim. ♂.

Hab. NICARAGUA, Chontales (*Belt*).

Two damaged male examples.

Species incertæ sedis.

36. **Cyclocephala ——?**

Hab. NICARAGUA (*Sallé*).

A single female example.

DYSCINETUS.

Dyscinetus, Harold, Col. Hefte, v. p. 123 (1869).

Chalepus, MacLeay, Horæ Ent. i. p. 149 (1819); Burmeister, Handb. der Ent. v. p. 75; Lacordaire, Gen. Col. iii. p. 403 (partim) (nom. præocc., Thunberg, 1805).

Upwards of twenty species of this exclusively American genus have been recorded. Although chiefly tropical a few are found in the warmer temperate zone both north and south.

Some of the species greatly resemble certain forms of Hydrophilidæ, e. g. *Hydrocharis*.

1. **Dyscinetus lævipunctatus.**

Dyscinetus trachypygus (partim), Burm. Handb. der Ent. v. p. 79[1].

Hab. MEXICO[1], Cordova, Toxpam (*Sallé*), Paso del Macho, Paso de San Juan, Acapulco (*Höge*), Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, Paso Antonio (*Champion*); NICARAGUA (*Sallé*), Chontales (*Janson*); PANAMA (*Boucard*).

Closely allied to *D. dubius* (Oliv.) of Cayenne, from which it differs in its narrower oblong form and in the pygidium being throughout confluent-punctate in both sexes; the four costæ on each elytron are also broader and flatter and the interspaces less numerously punctured. In the broad apex and narrow reflexed margin of the clypeus

and the broadly rounded mandibles the species closely resembles *D. dubius*. The closely sculptured pygidium led Burmeister to confuse it with the North-American *D. trachypygus*; this latter is smaller and more ovate in form, more strongly pnnctate, and has the pygidium still more densely sculptured and opaque and in the female furnished with two polished callosities near the apex; in *D. lævipunctatus* the sculpture of the pygidium is not so dense and leaves narrow smooth elevated interspaces.

The claw-joint of the anterior tarsi in the male is slender and straight as in the female, with level under surface, and the larger claw is scarcely thickened and forked; in *D. trachypygus* it is much thickened and strongly sinuated underneath, with long and thick much deflected larger claw.

Two allied species (*D. dubius* and another undescribed) similarly differentiated in the males are found together also on the Lower Amazons, and I at first thought they were cases of dimorphism in the male; but the differences in the male claws are associated with other differences in the form and sculpture of the pygidium. In *D. lævipunctatus* the pygidium is scarcely convex even in the male; in the following species it is rather strongly convex in this sex and triangular, but has compressed sides in the female.

I have adopted the MS. name given to the species by Chevrolat in the Sallé collection.

2. **Dyscinetus frater.** (Tab. XVIII. fig. 13, ♂.)

D. lævipunctato simillimus, elongato-oblongus, postice vix dilatatus, niger, clypeo plerumque fere lævi, antice lato margineque acute (nec in medio altius) reflexo, fronte pauciter punctulata; thorace passim distanter et mediocriter punctato; elytris utrinque striis geminatis punctulatis vix impressis, costulis quatuor planis, interspatiis plerumque sparse punctulatis.

♂. Pygidium crebre confluenter punctulatum, medio versus apicem læve politum. Tarsi antici articulo unguiculari robusto, subtus sat profunde sinuato, ungue majore latissimo, deflexo, inæqualiter fisso.

♀. Pygidium triangulare, parum convexum, sparse punctatum, nitidum, basi crebre confluenter punctatum.

Long. 20 millim. ♂ ♀.

Hab. Mexico, Paso del Macho, Paso de San Juan in Vera Cruz, Tejeria (*Höge*).

3. **Dyscinetus picipes.**

Chalepus picipes, Burm. Handb. der Ent. v. p. 79[1].

Hab. Mexico, Cordova, Toxpam (*Sallé*), Jalapa, Toluca, Vera Cruz, Tejeria (*Höge*).—West Indies[1], Cuba, Santo Domingo, Guadaloupe.

The strong and separated punctuation of the pygidium in both sexes mentioned by Burmeister is very constant; but a more important specific character is the very robust anterior tarsi of the male, the fourth joint of which is prolonged at the apex beneath (the prolongation finely striated) and the claw-joint strongly sinuated on its under surface, with the major claw remarkably broad, deflected, and unequally cleft, and the slender division divergent. The clypeus is always undulate-strigose and much narrower in front than in the preceding species, with its reflexed margin higher and sometimes

flexuous in the middle. The ligula differs from that of *D. lævipunctatus* in being deeply angulate-emarginate; and the mandibles differ greatly in being sinuated externally towards the apex, and not broadly rounded as in the typical species of the genus.

4. Dyscinetus barbatus.

Scarabæus barbatus, Fabr. Mant. Ins. i. p. 10. no. 91.
Melolontha barbata, Fabr. Syst. Eleuth. ii. p. 167 [1].
Chalepus barbatus, Burm. Handb. der Ent. v. p. 77 [2].
Chalepus hydrophiloides, Burm. loc. cit. p. 77 [3].

Hab. Guatemala (*Sallé*).—South America, Pernambuco to Santa Catarina [3]; West Indies [1 2] ("India," *Fabr.*).

On comparing a large series from many localities in the West Indies and Brazil, I find no difference of any moment among them and suspect that *C. hydrophiloides*, Burm., is the same species. The sexual characters, both male and female, are the same throughout.

5. Dyscinetus bidentatus.

Chalepus bidentatus, Burm. Handb. der Ent. v. p. 81 [1].
Cyclocephala brevis, Perty, Del. Anim. Art. Bras. p. 46, t. 9. fig. 16?

Hab. Mexico, Cordova (*Sallé*), Vera Cruz, Tejeria (*Höge*).—South America [1], Venezuela, Amazons.

The description of *Cyclocephala brevis*, Perty, seems to me to apply to this species rather than to *D. gagates*, to which Burmeister refers it with doubt.

STENOCRATES.

Stenocrates, Burmeister, Handb. der Ent. v. p. 83 (1847).

Six species of this genus are known, all tropical American. Besides the simple anterior tarsal claws of the males, the excessively compressed hinder tibiæ distinguish the genus from *Dyscinetus*.

1. Stenocrates laborator.

Geotrupes laborator, Fabr. Ent. Syst. i. p. 33 [1].
Scarabæus laborator, Oliv. Ent. i. 3, p. 53, t. 14. fig. 132.
Stenocrates laborator, Burm. Handb. der Ent. v. p. 85 [2].

Hab. Mexico, Tuxtla (*Sallé*).—South America, to South Brazil [1 2].

A single example in the Sallé collection is all that I have seen from our region of this common South-American species. It differs from the southern form in the margin of the frontal suture being somewhat raised on each side and in the fewer punctures of the thorax.

Subfam. *PENTODONTINÆ.*

EUETHEOLA.

Gen. *Stenocrati* et *Heteronycho* affinis, sed differt tarsis anticis ♂ simplicibus. Corpus cylindricum. Clypeus antice valde angustatus, apice bidentato-reflexus, carina frontali medio late interrupta. Mandibulæ extus valde sinuatæ, apice sursum reflexæ, margineque apicali lato, obtuso (interdum extus subdentatæ, apice extus et supra reflexæ); maxillæ apice crasse quinquedentatæ; mentum convexum; palpi fusiformes. Thorax simplex. Tarsi antici utroque sexu simplices; postici articulo primo triangulari. Prosterni processu postcoxali apice antice rectangulariter reflexo ibique planato. Organa stridulantia desunt.

This new genus is necessary for the reception of the *Heteronychus humilis* of Burmeister, a species which its describer afterwards excluded from *Heteronychus* on account of the absence of stridulating-surface from the propygidium, and which also differs from *Heteronychus* by the simple claw-joints of the male anterior tarsi. The under surface of the elytra near the margins is clothed with fine laid hairs. In the bidentate clypeus *Euetheola* much resembles *Dyscinetus bidentatus*, from which it generically differs again in the simple fore tarsi of the male, and also in the shape of the mandibles. The last-mentioned character separates it from *Stenocrates*, with which genus it has the closest affinity, and to one species of which (*S. holomelæna*) it bears so striking a resemblance that if the mandibles formed the only point of difference a generic separation would scarcely be justified; but *Euetheola* has a further distinguishing character in the short basal joint of the hind tarsi, which effectively separates it from *Stenocrates*, the latter having this joint always long and linear.

1. **Euetheola humilis.** (Tab. XVIII. fig. 14.)

Heteronychus humilis, Burm. Handb. der Ent. v. pp. 93 [1], 539.

Hab. Mexico, Tuxtla (*Sallé*), Tlacotalpam, Cordova (*Höge*); Panama, Lion Hill (*McLeannan*).—South America to South Brazil [1].

A Panama specimen is figured.

LIGYRUS.

Ligyrus, Burmeister, Handb. der Ent. v. p. 542 (1847); Lacordaire, Gen. Col. iii. p. 408.
Tomarus, Erichson, Wiegm. Archiv für Naturg. 1847, i. p. 95.

About a dozen distinct species of this genus have been described, all American, and spread over the temperate as well as the tropical zones. The characters given by Burmeister and Lacordaire require to be modified as regards the fore tarsi, which both authors give as simple in both sexes, but which in about half the species have the outer claw, in the male, thickened and deflected. The species are otherwise so closely related, all agreeing in the singular position of the stridulating-surface, viz. underneath the apical part of the elytra, and not, as in the Dynastidæ generally, on the propygidium, that the genus cannot well be divided. The mandibles are broad and flattened, with their apical edge armed with two teeth, and their outer edge strongly rounded, or in some cases forming a third tooth.

I. *Tarsi antici utroque sexu simplices.*

1. **Ligyrus latifovea.** (Tab. XVIII. fig. 15.)

Heteronychus scarabæinus, Burm. Handb. der Ent. v. p. 100[1]?
Ligyrus scarabæinus, Burm. loc. cit. p. 542 (nec *Cyclocephala scarabæina,* Perty).

Hab. Mexico, Teapa, Cosamaloapam (*Sallé*).—South America[1], Guiana, Amazons.

Two examples (male and female), agreeing well with others from Demerara and the Amazons with which I have compared them. Burmeister, as is clear from the note following his description, confounded two widely-distinct species under his *L. scarabæinus*. The "smaller-headed" form, with deeper thoracic excavation, to which his unsatisfactory description chiefly applies, is that in which the anterior tarsi are simple in both sexes; the "larger-headed" form, which appears to be equally common in Guiana and the Amazons valley, has a strongly thickened anterior claw-joint in the male, with the fourth joint produced and striated beneath. The latter is of a deeper black colour, and more finely punctured; the clypeus shows a wider space between the apical teeth; and the thoracic pit is narrower and triangular. This is, no doubt, the *Scarabæus ebenus* of De Geer (Mém. Ins. iv. p. 317, t. 19. f. 1), and according to Kirsch (Berl. ent. Zeitschr. 1873, p. 346), for whom von Harold compared specimens with the type at Munich, it is also the true *Cyclocephala scarabæina* of Perty.

L. gyas, Erichs. (Schomburgk, Reise Guian. iii. p. 561), is evidently closely allied to *L. latifovea*; but the closely-punctured elytra and small shallow thoracic pit apply better to a somewhat smaller species, of which I have many from the Amazons.

Ligyrus latifovea varies in size from 27 to 37 millim.; the clypeus is longer and more narrowed anteriorly than in *L. ebenus*, and the apical teeth are much more nearly approximated; and the thorax has a higher and sharper frontal tubercle, and a much broader (in large examples subquadrate) excavation. In both species the mandibles are bidentate, and the tibiæ simply tridentate.

2. **Ligyrus tumulosus.**

Heteronychus tumulosus, Burm. Handb. der Ent. v. p. 101[1].
Ligyrus tumulosus, Burm. loc. cit. p. 542.

Hab. ? North America[1].—Mexico, Vera Cruz (*Höge*); British Honduras, Belize (*Blancaneaux*).—South America, Colombia; West Indies[1].

Burmeister describes *L. tumulosus* as reddish-brown and strongly punctured (including the pygidium), with broad bidentate clypeus and front transversely carinated (carina depressed in the middle), and the thorax furnished with a feeble frontal tubercle and slight depression. These characters apply to a species of which I find only two examples in our collections, and which is very distinct from the deceptively-similar *L. sallæi* described below. To Burmeister's diagnosis must be added the important

characters that the anterior tarsi are simple in both sexes, and the tibiæ tridentate, *i. e.* without trace of a fourth upper tooth. The size ranges from 17 to 21 millim.

In the Munich catalogue *Scarabæus antillarum* of Beauvois is given as a probable synonym of *L. tumulosus*. The figure cited, however, plainly refers to a species with narrow bidentate clypeus, like *L. nasutus*.

3. Ligyrus gibbosus.

Scarabæus gibbosus, De Geer, Mém. Ins. iv. p. 322, t. 19. f. 7 [1].
Ligyrus gibbosus, Leconte, Proc. Ac. Phil. 1856, p. 20 [2]; Horn, Trans. Am. Ent. Soc. 1875, p. 143.
Podalgus variolosus, Burm. Handb. der Ent. v. p. 121 [3].
Geotrupes juvencus, Fabr. Ent. Syst. i. p. 32.
Podalgus juvencus, Burm. Handb. der Ent. v. p. 121 [4].
Ligyrus juvencus, Burm. loc. cit. p. 542.
Ligyrus morio, Leconte, Proc. Ac. Phil. 1856, p. 20 [5] (apud Horn, Trans. Am. Ent. Soc. 1875, p. 143).
Bothynus obsoletus, Leconte, Journ. Ac. Nat. Sci. 2nd ser. i. p. 87 [6].
Bothynus neglectus, Leconte, loc. cit.

Hab. North America [1 2 3 4 5 6].—Mexico, Mazatlan (*Dr. Cæsar*, sec. *Sturm in coll. Sallé*), Durango city (*Höge*).

The single example from Sturm's collection agrees precisely with North-American specimens of *L. gibbosus* (*juvencus*) with which I have compared it. Numerous so-called species have been founded on slight variations which are not more marked here than in other species of the genus, and I follow Dr. Horn in re-uniting them. *L. gibbosus* is closely allied to *L. tumulosus*; but is generally shorter and relatively broader, with the teeth of the clypeus approximated, the frontal carina median and entire, and the tubercle and pit of the thorax more strongly developed. The single specimen from Durango city is much worn, but is evidently referable to the same species.

4. Ligyrus ruginasus.

Ligyrus ruginasus, Leconte, Proc. Ac. Phil. 1856, p. 20 [1].

Hab. North America, Texas [1].—Mexico, San Pedro in Coahuila (*Dr. Palmer*), Chihuahua city, Villa Lerdo in Durango, Iguala in Guerrero (*Höge*), Ventanas (*Forrer*).

Distinguished from all other species of the genus by its pointed and submucronated clypeus and reddish-testaceous colour; the anterior tarsi are simple in both sexes, and the tibiæ tridentated.

5. Ligyrus lævicollis. (Tab. XVIII. fig. 16, ♂.)

Oblongo-ovatus, niger, politus, subtus piceo-rufescens; clypeo valde angustato apiceque dentibus duobus approximatis, fronte tuberculis duobus mediocriter distantibus, conicis, acutis; thorace subelongato, disco lævi, lateribus disperse punctulatis, tuberculo antico parvo obtuso foveaque parva triangulari haud profunda parce punctato-rugulosa; elytris subgrosse punctatis, striis geminatis utrinque tribus, interstitio lato subsuturali plerumque lævi; pygidio fere lævi, basi tantum confluenter punctulato, ♂ valde convexo, ♀ planato-declivi. Tibiæ anticæ dente 4° brevissimo; tarsi antici ♂ ♀ simplices. Mandibulæ bidentatæ.
Long. 18–22 millim. ♂ ♀.

Hab. Mexico, Cordova, Acapulco and Chilpancingo in Guerrero, Tapachula in Chiapas (*Höge*); British Honduras, R. Sarstoon, Belize (*Blancaneaux*).

Agrees in some respects with Burmeister's description of his *L. fossator*, but he says the anterior tibiæ are without trace of tooth above the third. An example from Acapulco is figured.

6. **Ligyrus nasutus.** (Tab. XVIII. fig. 17, ♂.)

Podalgus nasutus, Burm. Handb. der Ent. v. p. 120 [1].

Hab. Mexico, Acapulco and Chilpancingo in Guerrero (*Höge*), Yucatan [1]; Guatemala [1], San Gerónimo (*Champion*).

Twelve examples, in all of which the frontal carina is continuous (without median depression), and at each end connected with the side of the head by a short lower carina. The weak marginal tubercle of the thorax mentioned by Burmeister exists at most only as a triangular flat projection of the anterior margin, and in many examples is entirely absent. The pygidium is smooth and polished, generally with a few scattered punctures. A specimen from San Gerónimo is figured.

7. **Ligyrus pygidialis.**

A præcedente differt carina frontali medio depressa vel divisa plerumque utrinque abbreviata, pygidioque in ♀ medio apice depresso utrinque obtuse calloso.

Long. 16–18 millim. ♂ ♀.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

A very large series of examples, constant in their differences from *L. nasutus*. The thoracic tubercle is very seldom wanting, and is sometimes a little elevated and followed by a faint depression.

8. **Ligyrus fossor.**

Scarabæus fossor, Latreille in Humboldt and Bonpland's Obs. Zool. ii. p. 11, t. 31. f. 2 (1833) [1].

Podalgus fossor, Burm. Handb. der Ent. v. p. 119 [2].

Ligyrus fossor, Burm. loc. cit. p. 542.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet, Taboga Island (*Champion*).—South America, Colombia [1 2].

Very similar to *L. nasutus* and *L. pygidialis*, agreeing with the latter in the frontal carina being depressed in the middle (it is, in fact, interrupted and each half much less raised); but it differs from both in the pygidium being coarsely umbilicate-punctate, and the clypeus truncate-edentate. The frontal tubercle of the thorax is very slightly indicated. Mr. Champion obtained two examples only.

II. *Tarsi antici ♂ ungue exteriore crasso deflexo.*

9. **Ligyrus ebenus.**

Scarabæus ebenus, De Geer, Mém. Ins. iv. p. 317, t. 19. fig. 1 [1].
Scarabæus cordatus, Fabr. Ent. Syst. i. p. 31 (1792) [2].
Cyclocephala scarabæina, Perty, Del. Anim. Art. Bras. p. 46, t. 9. fig. 15 [3].
Ligyrus scarabæinus, Kirsch, Berl. ent. Zeitschr. 1873, p. 346.

Hab. Mexico, Tuxtla (*Sallé*).—South America, Guiana [1], Peru [3], Amazons, Brazil [3]; West Indies, St. Martin (*coll. Bates*), Guadaloupe [2].

Deep shining black (piceo-castaneous beneath) and finely sculptured. The head is broad, and the clypeus only moderately narrowed, with two very broad and obtuse distant teeth; the mandibles are bidentate and the tibiæ tridentate; the thoracic tubercle is acutely conical, and the fovea rather narrow and deep and subtriangular. In the male the anterior tarsi are short and thick, the fourth joint produced beneath into a longish flattened and striated tooth, and the outer claw is very broad and deflexed, and deeply, but unequally, cleft at the apex. The size of the Amazons and West Indian examples is 27–30 millim. M. Sallé's single Mexican specimen is only 22 millim. [De Geer says the species measures "about an inch" (old French ?).] It is named (with *L. latifovea*) *Ligyrus fossator* (Burm.) in the Sallé collection.

10. **Ligyrus sallæi.** (Tab. XVIII. fig. 18.)

L. relicto (Say) proxime affinis, sed *L. tumuloso* (Burm.) similior. Elongato-oblongo-ovatus, castaneo-fuscus (interdum elytris rubicundis) vel nigro-piceus, nitidus, pectore vulpino-villoso; clypeo valde angustato apice valde reflexo, dentibus duobus latis, carina frontali alte elevata et medio valde depressa vertice concavo; thorace disperse punctato, antice simplici; elytris utrinque striis punctatis geminatis tribus, interstitiis mediocriter punctatis; pygidio discrete (interdum parce) umbilicato-punctato. Tibiæ anticæ dente 4° parvo, acuto, juxta 3^{i} basin alteraque simili inter 2^{m} et 3^{m}. ♂: Tarsi antici mediocriter robusti, ungue majore deflexo incrassato apice intus uni-spinoso; articulo 4° apice subtus producto et striato. Mandibulæ tridentatæ.
Long. 18–25 millim. ♂ ♀.

Hab. Mexico, Toluca, Juquila, Vera Cruz (*Sallé*), Mexico city (*Höge*, *Smith*), Irapuato in Guanajuato, Jalapa, Almolonga, Oaxaca (*Höge*); Guatemala (*Sallé*), Cubulco in Vera Paz (*Champion*); Nicaragua, Chontales (*Janson*); Costa Rica, Cache (*Rogers*).

More than fifty examples, varying widely in size, form, and colour, but very constant in the structural characters described above. The species comes very close to the North-American *L. relictus*, having a very similar form of frontal carina, and similar mandibles and anterior claw-joint and claws in the male. When a large series of each is compared, much dissimilarity is shown as to general form and colour, and *L. sallæi* differs in every example in the much broader and less approximated clypeal teeth, and the presence of a well-formed denticle between the 2nd and 3rd anterior tibial teeth. We figure an individual from Almolonga.

BOTHYNUS.

Bothynus, Hope, Col Man. i. p. 95 (1837); Burmeister, Handb. der Ent. v. p. 115, § II. (1847); Lacordaire, Gen. Col. iii. p. 413.

A genus containing five described species from South America. It is very insufficiently distinguished by the authors above cited from *Scaptophilus*, of which eleven species from the same region and from the West Indies have been described. With *Corynoscelis*, Burm., the three genera form a small group, distinguished from *Ligyrus* and its allies by the propygidium being more or less strongly produced in the middle, and restricting the length of the pygidium, and its surface being scored in both sexes with fine transverse striæ as part of the stridulating-apparatus.

1. **Bothynus quadridens.** (Tab. XVIII. fig. 22.)

Corynoscelis quadridens, Taschenberg, Zeitschr. f. d. gesammten Naturwissensch. i. Neue Folge, p. 185 [1].

Hab. Mexico, Oaxaca (*Sallé*), Tres Marias Is. (*Forrer*); British Honduras (*Blancaneaux*); Panama, Chiriqui (*Trötsch*).—South America; Ecuador [1].

♂. Tarsi antici ungue exteriore valide dentato, sed nec incrassato nec deflexo.

Five examples. This species is possibly the *Podalgus complanus*, Burm. Our examples agree perfectly with Taschenberg's description, except that no mention is made there of an obtuse prominence in the middle of the hind margin of the confluent-punctate thoracic fovea. This exists in all, except in a feebly-developed female. The insect is glossy-black or piceous, with nearly smooth elytra, which at most have a feebly-indicated sutural stria, and a few other faint striæ near the base.

A specimen from Tres Marias Islands is figured.

2. **Bothynus simplicitarsis.**

B. quadridenti simillima, differt solum unguibus tarsorum anticorum in ♂ simplicibus. Oblongus, interdum latius oblongus, nigro-nitidus, subtus picescens et vulpino-rufo hirtus; mandibulis valide et acute tridentatis; capite punctato-scabroso, clypeo elongato attenuato, lateribus sinuatis, apice acute bidentatis, fronte tuberculo compresso basi dilatato; thorace mediocriter transverso, lateribus cum angulis posticis rotundatis, margine antico medio unituberculato, disco anteriore late foveato, ruguloso-punctato, foveæ margine posteriore medio plerumque obtusissime unituberculato, lateribus discrete punctatis, versus basin sublævi, margine basali stria paullo impresso, confuse punctato; elytris fere lævibus, plus minusve subtiliter striato-punctulatis, stria suturali haud impressa. Tibiæ anticæ valide 4-dentatæ; 4 posteriores extus acute bicarinatæ carinisque extus in dentem productis, apice flexuosæ, setosæ.

♂. Pygidium paullo convexum; segmentum ultimum ventrali apice late et profunde sinuatum. Tarsi antici unguibus simplicibus.

♀. Propygidium medio minus productum; pygidium planum vel concavum; segmentum ultimum ventrale latum, apice integrum.

Long. 27–32 millim. ♂ ♀.

Hab. Guatemala, Coban in Vera Paz (*Champion*, *Conradt*). Eighteen examples.

3. Bothynus monstrosus.

Late quadrato-oblongus, niger, nitidus, subtus piceus, vulpino-rufo hirtus. Mandibulæ et capite sicut in *B. simplicitarsi*, occipite prolongato excepto; thorace latissimo et brevissimo, antice profundissime triangulariter emarginato, margine ipso in medio interrupto, dorso medio sulcato, disco anteriore utrinque in foveam elongato-transversam excavato et scabroso-punctato, fovearum margine posteriore flexuoso et obtuse plurituberculato, lateribus cum angulis posticis rotundatis; elytris sicut in *B. simplicitarsi* fere lævibus. ♂. Tarsi antici unguibus simplicibus.

Long. 30 millim. ♂.

Hab. GUATEMALA, Coban in Vera Paz (*Conradt*). One example only.

CHEIROPLATYS.

Cheiroplatys, Hope, Col. Man. i. p. 84, t. 1. fig. 3 (1837); Burmeister, Handb. der Ent. v. p. 108; Lacordaire, Gen. Col. iii. p. 411 (1856).

Orizabus, Fairmaire, Rev. et Mag. Zool. 1878, p. 260; Horn, Trans. Am. Ent. Soc. xii. p. 124 (1885).

The genus *Orizabus* was suggested, without name, by Lacordaire, who, in a footnote to his description of the Australian genus *Cheiroplatys*, mentioned that he had a Mexican species possessing characters belonging to it, but differing in many essential points; but these differences were not specified either by him or by Fairmaire, who admitted the very close affinity between the Mexican and Australian forms. The uncertainty under which the genus *Cheiroplatys* stands, owing to Hope's erroneous and misleading description and figures, and the further confusion he introduced by founding his characters on an undescribed species, whilst citing as the type a Fabrician species which has no near relationship to his described type, are no doubt partly the cause why the genus *Orizabus* was founded and has been retained. I think, however, the two genera may be safely reduced to one. The great similarity in the extraordinary form of the fore tibiæ of the male in nearly all the species, and in the reflexed front edge of the clypeus raised behind the true front edge, as well as the entire agreement in form of thorax and legs and in the sculpture, is corroborated by a close agreement in the parts of the mouth, especially in the short and broad, unarmed mandibles (concealed in repose), and the elongated mentum, gradually narrowed but parallel-sided in the ligular part, with the apex of the latter notched or truncated. Hope's figure of the maxillæ is superficially accurate, but he failed to note that the two apparently simple teeth are each two teeth side by side; as to the mentum his figure and description are alike erroneous if they are taken from the same species, *C. juvencus* of Burmeister (Handb. der Ent. v. p. 110), which both authors consider to be the *C. juvencus*, Kirby, MS., the type of the genus. I have compared the parts of the mouth of that species with those of *C.* (*Orizabus*) *cultripes*, Fairm.

Five species of *Orizabus* have been described from the United States and Mexico, and twelve species of *Cheiroplatys* from Australia and the Islands of the Western Pacific. Many of the latter require re-examination.

1. **Cheiroplatys cultripes.** (Tab. XVIII. figg. 19 ♂, 20 ♀.)

Orizabus cultripes, Fairm. Rev. et Mag. Zool. 1878, p. 261[1].

Hab. MEXICO, Orizaba[1], Toluca, Tepansacualco, Duraznal (*Sallé*), Jalapa, Misantla, Mexico city (*Höge*); GUATEMALA, Coban in Vera Paz (*Champion*), Tactic, Tepan (*Conradt*).

This species is barely distinguished from the following by the immarginate base of the thorax; for some examples show a trace of marginal sulcus in the depression which exists on each side, and it is often visible also towards the hind angles.

The anterior tibiæ of the female, both in this species and in *C. clunalis*, sometimes assume the male form, *i. e.* the outer side laminiform and unarmed. In all the other females the anterior tibiæ are more or less expanded, and the outer edge is often deeply bisinuated, or even unisinuated, rather than tridentated.

2. **Cheiroplatys clunalis.**

Aphonus (?) *clunalis*, Leconte, Proc. Ac. Phil. 1856, p. 23[1].
Orizabus Snowii, Horn, Trans. Am. Ent. Soc. 1885, p. 124 (♂)[2].
Orizabus ligyroides, Horn, loc. cit. p. 125 (♀)[3].
Orizabus marginatus, Fairm. Rev. et Mag. Zool. 1878, p. 262[4].
Orizabus Sallei, Fairm. loc. cit.[5]

Hab. NORTH AMERICA, Texas[1], New Mexico[2], Arizona[3].—MEXICO[4], San Miguelito (*Dr. Palmer*), Orizaba, Oaxaca, Jalapa[5] (*Sallé*), Cordova, Pachuca in Hidalgo, Mexico city (*Höge*).

The marginal sulcus or impressed line of the base of the thorax is always visible in both sexes, and, with a few exceptions (where it is interrupted and faint), continuous; it is nearly always curved or angular in the middle of the basal lobe, and scored on the dorsal surface (not on the deflected edge) of the thorax.

I have compared type-specimens of the males of *O. marginatus* and *O. sallæi*, bearing names in Fairmaire's handwriting, and find no differences between them, except in size and punctuation, in both of which features, as well as in general form, the species is very variable; and I have also compared these with examples of *C. clunalis* (Lec.), male and female, named for me by Dr. Horn, and find no difference worth mentioning.

3. **Cheiroplatys fairmairei.** (Tab. XVIII. figg. 23 ♂, 24 ♀.)

Minor, breviter quadratus, piceo-niger vel castaneus, thorace interdum rufo, nitidus, subtus vulpino-villosus; clypei margine antico cariniformi minime bidentato, fronte inermi vel unituberculata; thorace antice gradatim angustato, medio basi late immarginato; elytris fere sicut in *C. clunali* punctato-striatis. Tibiæ anticæ ♂ ♀ extus nullo modo explanatæ, obtuse tridentatæ, dentibus duabus apicalibus approximatis. ♂. Thorax sicut in ♀ convexus, simplex.

Long. 16–19 millim. ♂ ♀.

Hab. MEXICO, Jacale, San Andres Tuxtla (*Sallé*), Pachuca in Hidalgo, Oaxaca, Esperanza (*Höge*).

The male, of which there are many examples, is readily distinguishable from the same sex of the other species by the absence of thoracic fovea and marginal tubercle, and by the tridentate anterior tibiæ; in all examples the thorax is free from traces of marginal stria along the base, except near the angles. The female is not distinguishable, except in size, from the same sex of *C. cultripes*.

The numerous specimens may, perhaps, be only degraded forms of one or other of the two larger species; some females (*C. clunalis*) are of similar size, and are distinguishable from *C. fairmairei* only by the base of the thorax being margined. One male specimen in the Sallé collection is labelled, in Fairmaire's handwriting, as *Orizabus sallæi* ♀; but its small size shows that it was not included in his description and dimensions of that species.

4. Cheiroplatys isodonoides.

Orizabus isodonoides, Fairm. Rev. et Mag. Zool. 1878, p. 263 [1].

Hab. Mexico, Toluca [1] (*Sallé, Höge*), Mexico city, Salazar (*Höge*).

A small species, similar to the preceding, but of shorter, subquadrate-ovate form, and distinguished from all others of the genus by the transverse carina near the frontal suture, extending from side to side in front of the eyes, and parallel to the straight apical carina of the clypeus. The anterior tibiæ of the male are dilated and unisinuate externally.

Subfam. *ORYCTINÆ*.

XYLORYCTES.

Xyloryctes, Hope, Col. Man. i. p. 90, t. 2. fig. 7 (1837); Burmeister, Handb. der Ent. v. p. 207; Lacordaire, Gen. Col. iii. p. 432.

A genus consisting of four described species, peculiar, so far as at present known, to North America, from temperate latitudes to the Isthmus of Panama, and to the West Indies.

Lacordaire is in error in stating that this genus has stridulating-striæ on the propygidium. That segment is simply punctured.

1. Xyloryctes satyrus.

Scarabæus satyrus, Fabr. Syst. Ent. p. 12 (1775) [1]; Olivier, Ent. i. 3, p. 39, t. 11. fig. 94 [2]; Drury, Ill. Ex. Ins. i. t. 34. figg. 1, 2 (♂ ♀).

Xyloryctes satyrus, Burm. Handb. der Ent. v. p. 208 [3].

Hab. North America [1 2 3].—Mexico (*Flohr*), Paso de San Juan in Vera Cruz, Zimapan in Hidalgo (*Höge*).

The Mexican examples agree with others from the Atlantic States, except that some of them have distinctly longer elytra, and at the same time the sides of the thorax in

the male less (or not perceptibly) sinuated towards the anterior angles. Others agree with the North-American form in both these respects.

Drury, apparently misled in some way by Fabricius, gave, in his Index (1773), the inappropriate name of *S. jamaicensis* to the insect of which he figured the male and female in the body of his work, stating, in the text, that he received the two sexes, found *in copulâ*, from New York. Fabricius soon after (1775) described his two species (*S. satyrus* and *S. jamaicensis*), the former the same as Drury's species, the latter evidently different from it, although he cites Drury's figures. On these grounds Von Harold (Col. Hefte, vii. p. 117) proposed the suppression of the name *S. satyrus*, and the adoption of that of *S. jamaicensis* for the New-York species. I cannot think that such a ridiculous misapplication of the laws of priority will be adopted by entomologists, especially by those of the United States, who, in fact, have hitherto ignored the suggestion.

2. **Xyloryctes lobicollis.** (Tab. XVIII. figg. 21, 21 *a*, ♂.)

X. satyro simillimus, paullo magis elongatus, thorace in ♂ antice verticaliter truncato et profundius excavato, margine superiore medio lobulo horizontaliter porrecto et obtuse sub-bifido, pygidioque subtiliter dense punctulato. Thorax margine antico rotundato et paullo dilatato, elytris sicut in *X. satyro* punctato-striatis.

♂ minor. Cornu capitis brevissimum; thorax antice multo minus alte truncatus, lobo mediano canaliculato brevissimo.

♀. Quam *X. satyro* magis elongata pygidioque subtilius punctulato.

Long. 24–33 millim. ♂ ♀.

Hab. Guatemala (*Sallé*), Zapote (*Champion*); Panama, Volcan de Chiriqui (*Trötsch*, *Champion*).

Fourteen specimens. From Mexican examples of *X. satyrus* this species is not distinguishable, except by the form of the thorax in the male, the fore part of which is vertically truncated, with a central obtuse lobe projecting beyond the upper edge, and the face of the truncation concave. A male specimen from Chiriqui is figured.

3. **Xyloryctes telephus.** (Tab. XIX. figg. 4, 4 *a*, 5, 5 *a*, ♂.)

Xyloryctes telephus, Burm. Handb. der Ent. v. p. 209[1].

Hab. Mexico[1], Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Oaxaca, Chiapas (*Sallé*), Jalapa (*Höge*).

A large number of examples were collected by Herr Höge at Jalapa, all agreeing in the obliteration of the sutural stria (except near the apex) as well as in the smoothness of the rest of the elytral surface, and in the long, nearly horizontal, conical lobe of the thorax, which projects over the deeply concave and vertical anterior truncature. The pygidium is much more sparsely punctured than in *X. lobicollis* and *X. furcatus*, and is often smooth and polished in the female. In males of minor development the thoracic lobe is very short and obtuse, but it is never absent. The size varies from

23 to 33 millimetres. The following is a doubtful variety, occurring in the same localities as the type form:—

Var. *X. ensifer*, Sturm, MS. Thoracis lobus brevis, latus, obtusus, medio canaliculatus; elytra lævia, stria suturali punctulata subobsoleta. (Figg. 5, 5 *a*.)

Hab. Mexico (*Sturm, in coll. Sallé*), Jalapa (*Höge*), Chiapas (*Sallé*).

We figure a typical well-developed male from Jalapa and a male of the var. *ensifer* from Mexico (*coll. Sturm*).

4. **Xyloryctes furcatus.** (Tab. XIX. figg. 1, 1 *a*, 2, 2 *a*, ♂.)

Xyloryctes furcatus, Burm. Handb. der Ent. v. p. 209[1].

Hab. Mexico[1], Cordova (*Sallé*), Mexico city, Jalapa (*Höge*); Guatemala (*Sallé*), Coban and Tactic in Vera Paz (*Conradt*).

Distinguished in the male (in well-developed individuals) by the narrow, long, obliquely elevated and bifid thoracic lobe; and from *X. telephus* in both sexes by the well-marked and punctulated sutural stria. The sides of the thorax in the male are more strongly explanate-reflexed than in the same sex of *X. telephus*, but some examples of the latter approach *X. furcatus* in this respect. The pygidium in the male is more closely punctulated. We figure a well-developed male example from Cordova, and a male minor from Jalapa.

5. **Xyloryctes corniger.**

Hab. Mexico (*Sturm, in coll. Sallé*); Panama, Volcan de Chiriqui 3000 feet (*Champion*).

A single male example, labelled *X. corniger*, Sturm, resembles *X. telephus*, var. *ensifer*, but has a well-impressed sutural stria and the thoracic lobe somewhat different, the latter being much broader and not canaliculated. It is a well-developed male (32 millim. long), and has an almost perfectly straight cephalic horn flattened anteriorly. Two examples, males of minor development, from Chiriqui, agree with Sturm's specimen in thoracic structure, and have cephalic horns very broad at the base, but small and acute-triangular in shape.

6. **Xyloryctes teuthras.** (Tab. XIX. figg. 3, 3 *a*, ♂.)

♂ minor. Breviter oblongus, castaneus, capitis cornu brevissimo basi lata apice acuto; thorace fere sicut in *X. satyro* antice oblique truncato-declivi, margine superiore medio minime vel haud producto; elytris obsoletissime striatis, stria suturali punctulato impresso, versus apicem profunde insculpta; pygidio passim punctulato punctis majoribus intermixtis.

Long. 24 millim.

Hab. Guatemala (*Sallé*), Aceytuno 5100 feet (*Salvin*).

Two examples only; of similar development to the two males of *X. corniger* from

Chiriqui above described, but differing in the much more slanting truncature of the fore part of the thorax and the absence of median prominence. Slight as their peculiarities are they cannot be referred as varieties to any of the other described species.

The species is labelled *X. teuthras*, Candèze, in the Sallé collection.

7. **Xyloryctes thestalus.** (Tab. XVIII. figg. 25, 25 *a*, ♂.)

Robustus, *X. telepho* latius oblongus, piceo- vel castaneo-niger; elytris subtiliter punctulato-striatis, interstitiis convexis, stria suturali punctata distincta sed medio parum impressa; pygidio disperse punctato.

♂ major. Cornu capitis altum, subrecurvum, apice postice nodosum; thorax antice valde oblique declivis nec medio concavus, lobo mediano longe post medium oblique ascendenti, apice lato et plerumque emarginato.

Long. 32–37 millim. ♂.

Hab. Mexico, near the city (*Flohr*, *Höge*).

Numerous examples, differing but little in development, and all distinguished from *X. telephus*, apart from the presence of a sutural stria, by the very different form of the thoracic truncature, and the position of the central lobe or short horn projecting from its upper margin; this latter in *X. telephus* and in other species rises much before the middle of the thorax, and in *X. thestalus* considerably behind the middle, with the correspondingly oblique truncature plane, instead of concave, in the centre.

Certain female examples from the same locality may belong to this species; they do not, however, differ from the corresponding sex of *X. furcatus*. They are of large size (34 millim.), and have a distinct punctured sutural stria, with other striæ on the elytra indicated by convex interstices as in the male.

MEGACERAS.

Megaceras, Hope, Col. Man. i. p. 82, t. 1. fig. 1 (1837); Burmeister, Handb. der Ent. v. p. 221; Lacordaire, Gen. Col. iii. p. 435.

Seven species of this fine genus have been described, all from Tropical South America; one of them is here recorded for the first time as occurring north of the isthmus.

1. **Megaceras philoctetes.** (Tab. XIX. figg. 6, 6 *a*, ♂ var.)

Scarabæus philoctetes, Oliv. Ent. i. 3, p. 16, t. 14. fig. 125[1].

Hab. Costa Rica (*Sallé*, *Van Patten*), Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).—South America, Surinam, Guiana, Brazil[1].

The very numerous Central-American specimens differ from the many typical examples from Surinam and the Amazons with which I have compared them sufficiently to be distinguished as a local form:—

Var. *M. septentrionis.* Brevior, piceo-niger vel castaneus; clypeo acute bidentato; thorace brevi, lateribus medio valde rotundatis, angulis posticis obtusis fere rotundatis, in ♂ interdum (raro) subrectis.

♂. Cornu capitis apice latum emarginatum, interdum subacutum, postice prope apicem obtusissime tuberculatum

vel simplex; thorace sicut in typo gibbere alto antice dentibus duobus subparallelis lateribusque a gibbere usque ad angulos anticos et marginibus grosse strigosis.

♀. Thorax dimidio anteriore et lateribus grosse, antice confluenter, punctatis, medio prope marginem anticum obsolete bituberculatus.

Long. 32–45 millim. ♂ ♀.

Examples of this variety are labelled in the Sallé collection *M. morpheus*, Burm.; but they do not at all agree with that author's description, which refers to a species from Colombia of narrow form, and especially narrow prothorax. Burmeister's descriptions of the species of this genus are, besides, so incomplete, that no safe determination is possible.

The stridulating-striæ of the propygidium are beautifully perfect on two divergent ribs which cross the middle of the segment; on the rest of the surface they are coarser and interrupted. In a highly-developed male example from Costa Rica the thorax is longer than in the others, and is gradually narrowed in an incurved line from the median dilatation to the anterior angles. *M. philoctetes* was found in the greatest profusion in the water and along the banks of a lagoon in the dense forest on the slope of the Volcan de Chiriqui at an elevation of 4000 feet (*Champion*). A well-developed male from Bugaba is shown on our Plate.

CŒLOSIS.

Cœlosis, Hope, Col. Man. i. p. 88, t. 2. fig. 6 (1837); Burmeister, Handb. der Ent. p. 215; Lacordaire, Gen. Col. iii. p. 436.

Three or four species are all that are at present known of this peculiar genus, one extending to Mexico and the others restricted to Tropical South America.

1. Cœlosis biloba.

Scarabæus bilobus, Linn. Syst. Nat. i. 2, p. 544; Fabr. Syst. Ent. p. 6; Oliv. Ent. i. 3, p. 31, t. 5. fig. 35 (♀), t. 23. fig. 35 (♂), t. 1. fig. 5 (♂ minor) [1].

Cœlosis biloba, Burm. Handb. der Ent. v. p. 217 [2].

Hab. Mexico, Cordova, Toxpam (*Sallé*, *Höge*); British Honduras, Cayo (*Blancaneaux*); Guatemala, Cubilguitz (*Champion*), Coban (*Conradt*); Honduras, Ruatan I. (*Gaumer*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui, David, Tolé (*Champion*).—South America, Cayenne [1 2]; West Indies [1].

Mexican examples figure in collections under the catalogue-name of var. *nicon* (Chevr.), but they offer no character to distinguish them from the Panama and South-American form.

HETEROGOMPHUS.

Heterogomphus, Burmeister, Handb. der Ent. v. p. 225 (1847); Lacordaire, Gen. Col. iii. p. 437.

Twenty species of this ill-defined genus of Dynastidæ are recorded, with two or three exceptions all from South America, chiefly Brazil.

1. **Heterogomphus chevrolati.** (Tab. XIX. figg. 7, 7 *a*, ♂; 8, 8 *a*, ♀; 9, 9 *a*, ♂, var.)

Heterogomphus Chevrolatii, Burm. Handb. der Ent. v. p. 233[1].

Hab. Mexico[1], Mirador, Capulalpam (*Sallé*), Jalapa (*Höge*); Guatemala, Senahu in Vera Paz (*Champion*), Coban (*Conradt*); Costa Rica, Rio Sucio (*Rogers*).—Colombia, Santa Marta.

Both mandibles and maxillæ in this species are toothless, and prolonged into narrow sharp-pointed blades; and the apical rims of the four posterior tibiæ are minutely crenulated, and not toothed. The following variety is known only in the form of undeveloped males, and though agreeing with *H. chevrolati* in mouth-structure and the form of the terminal rims of the posterior tibiæ, it may prove when further material arrives to be a distinct species:—

Var. *H. eurytus*. ♂ minor; brevior et latior, præcipue elytris postice ampliatis. Rufo-castaneus, cornu capitis brevissimum; thorace valde transverso, lateribus arcuatis dimidio anteriore et lateribus fulvo-hirtis grosse strigosis, foveæque latæ anterioris margine postico obtuse transversim tuberculato; elytris lævibus, subtiliter punctulatis, stria suturali debili et striis nonnullis curtis post humeros punctatis. (Figg. 9, 9 *a*.)
Long. 38 millim.

Hab. Costa Rica, Irazu 6000 to 7000 feet (*Rogers*). Two examples.

We figure a typical well-developed male from Mirador, a female from Capulalpam, and a male minor of the var. *eurytus* from Irazu.

2. **Heterogomphus hopei.**

Heterogomphus Hopei, Burm. Handb. der Ent. v. p. 231[1].

Hab. Mexico[1].

Unknown to me.

DÆMONOPLUS.

Dæmonoplus, Thomson, Archiv. Entom. ii. p. 68 (1858).
Heterogomphus, Gemminger & Harold, Cat. Col. iv. p. 1262 (1869).

This genus is limited, at present, to the following species, which Thomson, in describing it, believed to be from the Gaboon. Gemminger and Harold included it in the genus *Heterogomphus*; it has, however, well-marked peculiarities which render it advisable to retain the genus formed for its reception. In the form and dentition of its anterior tibiæ in both sexes it comes much nearer to *Podischnus*, and the females are not easy to be distinguished from the same sex of certain species of *Golofa*.

1. **Dæmonoplus mniszechi.** (Tab. XIX. figg. 10, 10 *a*, ♂; 11, ♀.)

Dæmonoplus Mniszechii, Thoms. Archiv. Entom. ii. p. 69, t. 2. fig. 2.
Heterogomphus Mniszechi, Gemm. & Har. Cat. Col. iv. p. 1262[1].

Hab. Mexico[1]; Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 4000 feet (*Champion*).

♀. Frons unituberculata; thorax simplex, prope marginem anticum breviter bituberculatus, dimidio anteriore punctato-rugosus.

The anterior tibiæ have four rather fine sharp teeth, and the terminal tooth is formed like the others, and not broad and almost duplicated as Burmeister states of *H. hopei*. The apical rim of the hindmost tibiæ has four very short teeth, and that of the middle tibiæ one very long and sharp projection which is bidenticulate on one side. In these points, and in the three slender, equal, and obliquely elevated thoracic horns of the male, the species also differs from *H. hopei*.

A male from Costa Rica and a female from the Volcan de Chiriqui are figured.

ENEMA.

Enema, Hope, Col. Man. i. p. 83, t. 1. fig. 2 (1837); Burmeister, Handb. der Ent. v. p. 233; Lacordaire, Gen. Col. iii. p. 439.

A genus confined to the tropical zone of America. Six species have been described.

1. **Enema infundibulum.**

Scarabæus Enema, Fabr. Mantissa Ins. i. p. 4 (1787); Syst. Ent. i. p. 6; Oliv. Ent. i. 3, p. 22, t. 12. fig. 114, t. 17. fig. 157.
Enema infundibulum, Burm. Handb. der Ent. v. p. 234[1].

Hab. Nicaragua, Chontales (*Belt*, *Janson*).—South America to South Brazil[1] and Paraguay.

One male and one female example; considerably smaller than those found commonly Guiana and on the Amazons.

2. **Enema pan.** (Tab. XIX. figg. 12, 12 *a*, ♂, var.)

Scarabæus Pan, Fabr. Syst. Ent. i. p. 6[1]; Perty, Del. Anim. Art. Bras. p. 44, t. 9. fig. 10 (♂).
Enema Pan, Burm. Handb. der Ent. v. p. 235[2].
Scarabæus Titornus, Perty, loc. cit. p. 45, t. 9. fig. 12 (♂ minor).
Scarabæus quadrispinosus, Fabr. Species Ins. i. p. 11; Oliv. Ent. i. 3, p. 35, t. 19. fig. 179 (♀).

Hab. Mexico, Toxpam (*Sallé*), Jalapa (*Höge*); Nicaragua, Chontales (*Belt*, *Janson*).—South America to South Brazil[1 2] and Paraguay.

Var. ♂. Cornu capitis postice sine tuberculo.

Enema lupercus, Chevr. in Guér. Mag. Zool. 1843, Col. Mex. p. 28[1].
Scarabæus æneas, Kirby, Trans. Linn. Soc. xii. p. 399[2]?

Hab. Mexico[1], Cordova (*Sallé*), Jalapa (*Höge*).—South America, Colombia[2], Paraguay.

All gradations in the size of the tubercle on the hinder side of the horn of the male are found when a large series is examined. Its absence is simply a sign of lower sexual development. I do not remember to have seen the var. *lupercus* in the Amazons region, where *E. pan* is rather common, and where it is twice the size of the largest Mexican and Paraguayan examples that I have seen. Females of both forms do not differ, except in their very much smaller size, from the same sex of *E. infundibulum*, with which *E. pan* in the equatorial zone of America is always associated. These curious facts of distribution and development of male horns according to latitude make it extremely probable that *E. infundibulum* as well as *E. pan* and *E. lupercus* are only varying forms of development of one and the same species, the development being of size in both sexes, and of length and form of cephalic and thoracic horns in the male.

A male example from Cordova of the var. *lupercus* is shown on our Plate.

3. **Enema endymion.** (Tab. XIX. figg. 13, 13 *a*, ♂.)

Enema Endymion, Chevr. in Guér. Mag. Zool. 1843, Col. Mex. p. 29[1].
Enema Lupercus, Burm. Handb. der Ent. v. p. 236 (nec Chevrolat)[2].

Hab. Mexico[1 2], Tuxtepec (*Sallé*), Jalapa (*Höge*), Oaxaca (*Fenochio*); British Honduras (*Blancaneaux*); Guatemala, Panzos (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica, Cache (*Rogers*); Panama, Volcan de Chiriqui (*Champion*).

A very distinct species, widely distributed, but apparently not common. It was well described by Chevrolat in both sexes, but subsequently mistaken for *E. lupercus* by Burmeister. The elytra are always rufo-castaneous, and the thorax unarmed in both sexes, the latter being gibbous on the posterior disc, and minutely shagreened (with some larger punctures) in the male, moderately convex, and more coarsely sculptured in the female. *E. endymion* is smaller and of a narrower oblong shape than *E. pan*, and the thorax is more regularly arcuated on the sides, the curve continuing to the anterior angles, which are acute, but not produced as in *E. pan*. The Venezuelan *E. paniscus*, Burm., is a closely allied species, or local form, in which the thorax in the male is smooth and highly polished in the middle.

We figure a male example from Tuxtepec.

STRATEGUS.

Strategus, Hope, Col. Man. i. p. 87, t. 1. fig. 5 (1837); Burmeister, Handb. der Ent. v. p. 128; Lacordaire, Gen. Col. iii. p. 440.

This genus is exclusively American, and found in the temperate zones north and south, as well as in the tropics and the West Indies. Seventeen species have been described, three of which inhabit Central America *.

* The Munich Catalogue includes Mexico in the localities of *S. antœus*, but I have not seen a Mexican specimen. Dr. Horn, in his paper on the North-American *Strategi*, gives Texas as the southern limit of the range of *S. antœus*.

1. Strategus jugurtha.

Strategus Jugurtha, Burm. Handb. der Ent. v. p. 131[1].

Hab. Nicaragua, Chontales (*Belt*, *Janson*).—Colombia[1].

Distinguished by its acuminated clypeus in both sexes, and the three long and slender horns of the male.

2. Strategus cessus.

Strategus cessus, Leconte, Proc. Acad. Phil. 1866, p. 382[1]; Horn, Trans. Am. Ent. Soc. v. p. 146 (1875)[2].

Hab. North America, Arizona[1 2].—Mexico, Northern Sonora (*Morrison*).

3. Strategus julianus. (Tab. XIX. figg. 14, 14 *a*, 15, 15 *a*, ♂.)

Strategus Julianus, Burm. Handb. der Ent. v. p. 133[1]; Horn, Trans. Am. Ent. Soc. v. p. 144 (1875)[2].

Hab. North America, Georgia[2].—Mexico[1 2], Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Orizaba, Oaxaca, Playa Vicente, Chiapas (*Sallé*), Jalapa, Mexico city (*Höge*), Temax in North Yucatan (*Gaumer*); British Honduras (*Blancaneaux*); Guatemala (*Sallé*), near the city (*Salvin*), Champerico, Escuintla, Capetillo, Zapote, Panzos, Coban (*Champion*); Honduras, Ruatan I. (*Gaumer*); Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*), Cache, Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).—South America, Colombia (*coll. Bates*).

The very numerous examples examined include the variations in the anterior thoracic horn of the male (notched or simple), and in the smooth or rugose thoracic cavities, mentioned by Burmeister, together with others not recorded by that author in the general form and colour, and in the number of teeth on the apical rim of the posterior tibiæ. Some examples are remarkably broad, and in consequence differ from the majority in the greater width between the posterior horns of the thorax, and some are wholly pitchy-black in colour. The dentition of the apex of the posterior tibiæ usually consists of three teeth, the inner one much smaller than the others, and (apparently by aberration) sometimes wanting or resolved into two smaller teeth. All examples of the male agree in the more or less broadly triangular emargination of the front edge of the clypeus; and this seems to be the sole character which distinguishes the species from the South-American *S. aloeus* (Linn.), of which Linnæus in his original description (Mus. Lud. Ulr. p. 7) says, "Caput depressum, obtusissimum, angulis reflexis," and Burmeister, "deren vorderes Kopfende stumpf, beim männchen mehr abgestutzt, scharfkantig." The female of *S. julianus* does not appear to differ from that of *S. aloeus*, the clypeus being much narrower than in the male, and obtusely truncated at the apex.

I cannot corroborate Burmeister's statement that the base of the anterior thoracic horn is always continued behind as an obtuse ridge along the middle of the thoracic cavity, dividing the latter into two deep pits; or that this is an important difference between *S. julianus* and *S. aloeus*. On the contrary, I have seen examples of *S. julianus* in both the larger and the minor developments of the male in which the ridge, except just at the commencement, is scarcely perceptible.

We figure a fully-developed male example from Mexico city, and a male minor from N. Yucatan.

Subfam. *DYNASTINÆ*.

PODISCHNUS.

Podischnus, Burmeister, Handb. der Ent. v. p. 237 (1847); Lacordaire, Gen. Col. iii. p. 438.
Mixigenus, Thomson, Arcana Naturæ, p. 7 (1859).

Two species only are known of this genus, restricted to Central America and the northern part of South America.

Burmeister describes the singular comb-like dentition of the rounded maxillary lobe quite correctly; but at the apex of the mentum, which he says is broad, he has overlooked the curious deflection of the true apical part of the ligula, which is triangular, and bends downwards at right angles.

1. **Podischnus agenor.** (Tab. XIX. figg. 16, 16*a*, 17, 17*a*, 18, 18*a*, ♂; 19, ♀.)

Scarabæus Agenor, Oliv. Ent. i. 3, p. 178, t. 27. fig. 241.
Podischnus agenor, Burm. Handb. der Ent. v. p. 238[1].
Scarabæus barbicornis, Latreille, in Humb. & Bonpl. Obs. Zool. i. p. 201, t. 22. fig. 1[2].

Hab. Mexico[2]; British Honduras (*Blancaneaux*); Guatemala, Escuintla (*Champion*); Nicaragua, Chontales (*Belt*); Panama, Lion Hill (*McLeannan*).—South America, Colombia[1], Upper Amazons.

The male exhibits numerous gradations of form, affecting the shape of both the cephalic horn and the curious thoracic elevation—half-moon shaped at the summit, and clothed with tawny hairs beneath—and also the sculpture of the anterior part of the thorax. The principal gradations are as follows:—

1. Cephalic horn greatly elongated, and armed behind with a broad tooth.
2. The horn shorter, and the posterior dentiform thickening scarcely perceptible.
3. The horn only half as long again as the head, simple, acute; thoracic horn only slightly elevated, but broad, emarginated, and hairy beneath (*S. barbicornis*, Latr.).
4. The horn much shorter than the head; the thoracic elevation forming only a slight prominence, with a hairy fovea in front of it.

5. The horn still shorter; the thoracic elevation advanced nearer to the front margin, with a glabrous fovea in front.

Fairmaire has proposed (Rev. et Mag. Zool. 1878, p. 266) to reverse the decision of Reiche, who referred *Scarabæus barbicornis*, Latr., to the prior *S. agenor* of Olivier, and to regard it as synonymous with *Podischnus tersander*, Burm. In this I cannot help disagreeing with him, as the description and figure of Latreille apply exactly to the minor development described above (No. 3) of *P. agenor*, and do not at all agree with the other species. Fairmaire appears to have been misled chiefly by the simple and flattened (from front and rear) cephalic horn of Latreille's figure; but this is the condition of the horn of *P. agenor* in minor developments, and the base is similarly flattened even in fully-developed males. As to the general form of the body, the figure of Latreille is that of an elongate-oblong insect like *P. agenor*, and not of a short and posteriorly-dilated species like *P. tersander*. The thoracic horn of the figure is also totally unlike the form assumed by *P. tersander* in any of its developments.

We figure two males from Chontales, and a male minor and a female from Lion Hill, Panama.

2. **Podischnus tersander.** (Tab. XX. figg. 1, 1*a*, ♂; 2, 2*a*, ♀.)

Podischnus Tersander, Burm. Handb. der Ent. v. p. 239[1].
Mixigenus Leander, Thoms. Arcana Naturæ, p. 7[2].
Mixigenus barbicornis, Fairm. Rev. et Mag. Zool. 1878, p. 266 (nec Latr.)[3].

Hab. Mexico[1 2 3], Orizaba (*Sallé*); Nicaragua, Chontales (*Belt*).

Fairmaire retains Thomson's genus *Mixigenus* for this species, but does not specify the points of structure in which it differs from *Podischnus*. The two species, in fact, agree unusually well in all characters on which genera are founded in Dynastidæ. The structure and armature of the legs are strikingly homogeneous, especially the sharply-toothed (instead of bristly) transverse ridges of the four hinder tibiæ.

We figure a male and a female from Orizaba.

GOLOFA.

Golofa, Hope, Trans. Ent. Soc. Lond. ii. p. 42 (1837); Burmeister, Handb. der Ent. v. p. 246; Lacordaire, Gen. Col. iii. p. 443.

This fine genus, one of the most remarkable forms of Dynastidæ found in the New World, is widely distributed over the tropical zone of the American continent, and is recorded, though possibly in error, as found in Chili. Fourteen species have been described; but some of them are founded on varieties, the species being subject to more than the usual range of modification as regards the shape of the horn-like processes of the head and thorax, and the size and colour are equally variable.

1. **Golofa pizarro.** (Tab. XX. figg. 3, 3*a*, ♂; 4, 4*a*, 5, 5*a*, 6, 6*a*, 7, 7*a*, ♂ var.)

Golofa Pizarro, Hope, Trans. Ent. Soc. Lond. ii. p. 44 (♂)[1].

Golofa hastatus, Burm. Handb. der Ent. v. p. 247 (♂ ♀) (nec Fabr.)[2].

Golofa Sallei, Thoms. Mus. Scient. i. p. 39 (1860)[3].

Golofa clavicornis, Thoms. loc. cit. p. 40[4].

Hab. Mexico[1 2 3 4], Mazatlan, Tuxtla, Cordova, Toxpam, Tanetza, Parada (*Sallé*), Jalapa (*Höge*); Guatemala (*Sallé*), Coban and Tactic in Vera Paz, Tepan (*Conradt*).

The examination of a very large series of this species, mostly from Jalapa, shows that it is extremely variable in the male sex, not only in colour and sculpture, but in the length, form, and sculpture of the thoracic horn; and, in fact, that no two examples fairly agree. The females, on the contrary, are, as nearly as possible, alike in form, colour, and sculpture, and differ only in size. In fully-developed males, the apex of the thoracic horn is always curved forward, and dilated into a broad and more or less tridentate plate. Those examples in which the horn is very long form the *G. sallei* of Thomson, and these vary in the horn being sometimes inclined backwards, in the dilated apex, double the width in some examples that it is in others, obtusely carinated above or marked with an impressed line, and in the length of the three teeth, the anterior one being sometimes very much reduced, so that the front of the club is nearly truncated, and sometimes short and notched. Males of all developments, in which the thoracic horn is strongly punctured, form the *G. clavicornis* of Thomson; but the non-validity of this species is shown by the facts that all the males of low development, with short subcylindrical thoracic horn, have the horn coarsely punctured, and that the coarsely-punctured horn does not correspond with coarsely-punctured elytra (as Thomson avers); moreover, every gradation is present, in a large series, with regard to the punctuation of the horn; and all were found together by Herr Höge in the same locality.

The general colour of the male varies from testaceous-yellow, through castaneous to sooty-black, the thorax in the yellower examples being generally more or less clouded with brown, and very rarely wholly brown. The underside of the body and legs also vary from yellowish or reddish-testaceous (with all articulations and tarsi darker) to sooty-black. The head entirely and thoracic horn are always black. The suture and the extreme lateral margin of the elytra in the yellower examples are dusky. The females are wholly black, moderately shining, and coarsely subconfluently punctured, and are difficult to be distinguished from the similarly-coloured females of allied species. The entire upper edge of the mandibles (in which they agree with the males) is the chief differentiating character; the colour of the pubescence on the under surface is tawny cinereous, scarcely rufescent as Burmeister gives it, and quite different from the foxy-red hue which distinguishes the very similar female of *G. championi*.

G. hastatus (Castelnau), referred to this species by Burmeister, seems to me to belong to *G. imperialis*. The form of the thoracic horn described is that of the undeveloped

male; but the size (17 lines) and the length of the cephalic horn are not those of this class of male in *G. pizarro*, though agreeing well with *G. imperialis*.

We figure a fully-developed typical male from Tuxtla, and four others of the same sex of the var. *clavicornis*, from Toxpam, Cordova, and Jalapa, showing the different developments of the cephalic and thoracic horns, and also the variation in the sculpture of the upper surface.

2. **Golofa imperialis.** (Tab. XX. figg. 8, 8 *a*, 9, 9 *a*, 10, 10 *a*, ♂.)

Golofa imperialis, Thoms. Ann. Soc. Ent. Fr. 1858, Bull. p. cxlvi; Arcana Naturæ, p. 10, t. 1. figs. 1, 2 (♂ ♀) [1].

Golofa Incas, Hope, Trans. Ent. Soc. Lond. ii. p. 43? [2].

Hab. Mexico [1 2] (*Sturm, in coll. Sallé*), Capulalpam, Cuernavaca, Duraznal (*Sallé*); Guatemala (*Sallé*).

Evidently very closely allied to *G. pizarro*, but probably specifically distinct. It is larger, and the largest examples of the male (46 millim.), which, judging from the long cephalic horn, are of full development, have a thoracic horn with parallel sides bent forward and pointed at the apex, and therefore different in shape from either the major or the minor males of *G. pizarro*; in the male minor the thoracic horn is reduced to a thick and very obtuse tubercle. The surface is more finely punctured, and the suture and lateral margins of the elytra are blacker, the thorax in some examples spotted with black, and the humeral angles of the elytra and the scutellum also black. The female is entirely black. In both sexes the apical edge of the mandibles is sometimes faintly (in the female more sharply) notched towards the inner angle, a character which distinguishes the species from *G. pelagon* and *G. ægeon*, in which the mandibles are bifid.

Hope's description of the male of his *G. incas*, especially with regard to the thoracic horn, "thorax cornu erecto, brevi, apice acuto," scarcely applies to *G. imperialis*, and that of the female is still less applicable. I have seen no *Golofa*, ♀, from Mexico of the colour he describes; but the present species is named *G. incas* in the Sallé collection.

We figure a well-developed male from Mexico (*coll. Sturm*), and a male minor from Duraznal and another from Guatemala.

3. **Golofa costaricensis.** (Tab. XX. figg. 11, 11 *a*, ♂.)

♂. *G. imperiali* proxime affinis; minor et angustior, elytris cinnamomeo-flavis (sutura leviter infuscata), subtilissime punctatis, sericeo-opacis, versus suturam subnitidis, thorace rufiore; mandibulis apice latis juxta angulum interiorem obtuse leviter incisis; corpore subtus cum femoribus longe et dense fulvo-griseo pubescenti. Tarsi antici articulo basali sequenti duplo longiore (nec sicut in *G. porteri* longissimo).

♂ (major?). Cornu capitis valde elongatum, gracile, postice rugosum et dentatum; cornu thoracis quam in *G. imperiali* altius et gracilius, versus apicem paullulum sensim dilatatum, apice antice curvatum obtusum vel obtuse acuminatum. Tarsi 4 postici haud incrassati nec subtus dense pilosi.

Long. 38–44 millim.

♂ minor. Cornu capitis brevissimum acutum, thoracis obtusissime tuberculiforme. Thorax undique sat dense et grosse punctatus punctis circularibus.

Long. 32 millim.

♀ ignota.

Hab. Costa Rica (*Van Patten*), Rio Sucio (*Rogers*).

Although in structure this species comes nearer to *G. imperialis*, it bears a greater general resemblance to the Venezuelan and Peruvian *G. ægeon*; from the latter it differs in its more cinnamon-tawny hue and less distinct black suture and margins, and in the form of the thoracic horn in the different developments of the male, the horn in *G. ægeon* being strongly compressed laterally in all stages, except the somewhat dilated apex of the most highly-developed individuals. The basal joint of the anterior tarsi is short (not longer than the second) in *G. ægeon*; the hind tarsi robust and densely hairy beneath, and the mandibles narrow and bifid. A well-developed male is shown on our Plate.

4. **Golofa championi.** (Tab. XX. figg. 12, 12 *a*, 13, 13 *a*, ♂; 14, 14 *a*, ♀.)

♂. Quoad corporis formam *G. ægeoni* similis, sed thorace fere inermi etc. valde differt. Supra fulvo-castanea, thorace fusco-nigro nebuloso, elytris vage fusco-nigro vittatis sutura et margine fuscis, capite, corpore subtus pedibusque fuligineo-nigris, pectore et femoribus flavo-cinereo villosis; thorace disperse disco posteriore confertim punctato, elytris irregulariter striato-punctatis. Tibiæ anticæ sicut in *Golofis* typicis tridentatæ, intermediæ medio extus unispinosæ apice extus valide bidentatæ, posticæ medio et apice inermes; tarsi antici articulo basali 2° dimidio longiore, postici subtus brevissimo setosi. Mandibulæ apice intus indentatæ, interdum subfissæ.

♂ major. Cornu capitis mediocriter elongatum, gracile, recurvum, postice punctatum, basi et capite longe pilosis. Cornu thoracis breve, compressum, acutum, oblique elevatum, antice et sulco thoracis anteriore longe pilosis.

♂ minor. Cornu capitis brevissimum, thorace inerme, antice medio fovea longe pilosa.

♀. Nigra, nitida, elytris fere sicut in *G. pizarro* ♀ dense punctatis, clypeo magis elongato; subtus dense vulpino-rufo pubescens. Tibiæ anticæ 4-dentatæ, intermediæ sicut in ♂, posticæ medio et apice brevissime dentatæ.

Long. 34–42 millim. ♂ ♀.

Hab. Guatemala, Cerro Zunil 4000 to 5000 feet (*Champion*).

Fifteen examples of the two sexes. The male minor agrees in many respects with the description of *G. inermis*, Thoms. Arcana Nat. p. 11, but the size (21–28 millim.) and locality (Chili) and some minor discrepancies lead me to conclude that the species are different.

We figure a well-developed male, a male minor, and a female, all from Cerro Zunil.

5. **Golofa imbellis.** (Tab. XX. figg. 16, 16 *a*, ♂; 18, 18 *a*, ♀.)

G. championi affinis; corpore postice magis ampliato; omnino castaneo-nigra, ♀ nigra nitida, subtus corpore toto cum propygidio et pygidio vulpino-rufo pubescentibus; thorace sat crebre, hic illic confertim, punctato; elytris sericeo-opacis subtiliter punctulatis, hic illic substriatis, versus suturam rugoso-punctatis et nitidioribus. Pedes sicut in *G. championi*. Mandibulæ apice integræ.

♂ major. Cornu capitis brevissimum, capite postice vulpino-piloso. Thorax nullo modo cornutus, medio antice leviter carinatus et juxta marginem fovea dense vulpino-pilosa.

♂ minor. Caput unituberculatum, thoraceque antice haud carinato.

♀. Nigra, nitida, fortius et crebrius quam in *G. championi* punctata, elytris utrinque striis punctatis geminatis tribus.

Long. 35–48 millim. ♂ ♀.

Hab. Costa Rica (*Sallé*, *Van Patten*), Volcan de Irazu 6000 to 7000 feet, Rio Sucio (*Rogers*).

Seventeen examples.

DYNASTES.

Dynastes, Kirby, Trans. Linn. Soc. xiv. p. 568 (1825); Burmeister, Handb. der Ent. v. p. 256; Lacordaire, Gen. Col. iii. p. 444.

Theogenes, Burmeister, Handb. der Ent. v. p. 254 (1847).

Four species have been described of this genus, comprising the grandest forms of the Dynastidæ group; all are American, the two belonging to the northern continent being, however, scarcely more than local forms of one stock.

1. **Dynastes hercules.**

Scarabæus Hercules, Linn. Syst. Nat. i. p. 541; Mus. Lud. Ulr. p. 3; Oliv. Ent. i. 3, p. 6, t. 1. f. 1 (♂), t. 23. f. 1 (♀); Burm. Handb. der Ent. v. p. 257[1].

Scarabæus scaber, Linn. Mus. Lud. Ulr. p. 17 (♀).

Scarabæus Alcides, Fabr. Mant. Ins. i. p. 3; Oliv. Ent. i. 3, t. 1. fig. 2 (♂ minor).

Scarabæus Perseus, Oliv. Ent. i. 3, t. 1. f. 3 (♂ minor).

Hab. Guatemala (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*); Panama, Bugaba, Dolega in Chiriqui (*Champion*).—Tropical South America[1]; West Indies[1].

This species is apparently very rare in Central America. In Guatemala and the State of Panama Mr. Champion only obtained fragments of male examples.

2. **Dynastes hyllus.** (Tab. XX. figg. 17, 17*a*, ♂.)

Dynastes hyllus, Chevr. Guér. Mag. Zool. 1843, Col. Mex. p. 33, t. 111 (♂), t. 112 (♀)[1].

Dynastes Iphiclus (Panz.), Burm. Handb. der Ent. v. p. 259[2].

Hab. Mexico[1 2], Toxpam, Oaxaca (*Sallé*), Jalapa (*Höge*), Acapulco (*Baron*); Guatemala (*Sallé*), Escuintla (*Conradt*).

A male minor from Oaxaca is figured.

MEGASOMA.

Megasoma, Kirby, Trans. Linn. Soc. xiv. p. 566 (1825); Gemminger & Harold, Cat. Col. iv. p. 1268.

Megalosoma, Burmeister, Gen. quæd. Ins. fasc. 7. c. tab.; Handb. der Ent. v. p. 273.

The range of the gigantic beetles constituting this genus is the same as that of *Dynastes*, except that they do not appear to occur in the West India Islands. Eight species are described.

1. **Megasoma elephas.**

Scarabæus elephas, Fabr. Syst. Ent. i. p. 7; Oliv. Ent. i. 3, p. 11, t. 15. fig. 138.
Dynastes elephas, Chevr. Guér. Mag. Zool. 1843, Ins. Mex. p. 31, t. 109 (♂), t. 110 (♀)[1].
Megalosoma elephas, Burm. Handb. der Ent. v. p. 275[2].
Megasoma elephas, Gemm. & Har. Cat. iv. p. 1268[3].

Hab. Mexico[2], Alvarado[1], Cordova (*Sallé*), San Blas[1]; British Honduras, Cayo (*Blancaneaux*); Guatemala[3], Champerico (*Champion*); Honduras, Ruatan Island (*Gaumer*); Costa Rica (*Van Patten*); Panama, Bugaba, David (*Champion*).

In Chiriqui, according to native report, this species is sometimes found in numbers about mango-trees when in fruit (*Champion*).

Subfam. *AGAOCEPHALINÆ.*

ÆGOPSIS.

Ægopsis, Burmeister, Handb. der Ent. v. p. 281 (1847); Lacordaire, Gen. Col. iii. p. 451.
Agacephala, Westwood, in Partington's Brit. Cycl. Nat. Hist. i. p. 372, tab. (1835) (nec Serville).

Two species of this distinct genus are known, one from Colombia, the other from Brazil.

1. **Ægopsis curvicornis.**

Agacephala curvicornis, Westw. in Partington's Brit. Cycl. Nat. Hist. i. p. 372, tab.[1]
Ægopsis curvicornis, Burm. Handb. der Ent. v. p. 282[2]; Lacord. Gen. Col. Atlas, t. 37. figg. 3, 3 *a*; Thoms. Mus. Scient. i. p. 17 (1860).

Hab. Panama (*Boucard*), Taboga I. (*J. J. Walker*).—Colombia[1 2].

LYCOMEDES.

Lycomedes, De Brême, Ann. Soc. Ent. Fr. 1844, p. 298; Burmeister, Handb. der Ent. v. p. 285; Lacordaire, Gen. Col. iii. p. 452.

A genus apparently confined to Central America and the north-western parts of Tropical America; one species is stated to be from Mexico. Four species have been described.

1. **Lycomedes mniszechi.** (Tab. XXI. figg. 1, 1 *a*, ♂.)

Lycomedes Mniszechii, Thomson, Mus. Scient. i. p. 16, t. 6. fig. 1[1].

Hab. Mexico[1]; Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Our collections do not contain a specimen of this species from Mexico, and only one (male) from Chontales, but Mr. Champion obtained a fine series in Chiriqui. The

male, from Mexico, described and figured by Thomson measured 44 millim., although, judging from the rudimentary state of the tubercle on the posterior side of the cephalic horn, it is not of the highest development of the sex; examples of similar development from Chiriqui are only 34 millim., and others of higher stage, in which the tubercle on the cephalic horn is distinct, acute, and situated nearer the middle of the horn, and in which the thoracic horn is of relatively much greater length than in Thomson's specimen, measure only 40 millim. All the examples, nevertheless, agree in other respects with the figure above cited.

The species is distinguished from the three described from South America by the long, slender, pointed thoracic horn, which projects subhorizontally beyond the apex of the porrected cephalic horn.

The males, as they decrease in development, lose all trace of posterior tubercle on the cephalic horn, and in the lowest stage both that and the thoracic horn are extremely short (about 2 millim.), both still preserving the shape and direction characteristic of the species.

2. **Lycomedes beltianus.** (Tab. XXI. figg. 4, 4 *a*, ♂.)

L. mniszechi affinis, elytris medio magis explanato-dilatatis, tomentoque cinereo magis sericeo et variegato. ♂. Cornu capitis apice acutum, postice infra apicem unituberculatum et prope basin tuberculo majore; cornu thoracis oblique elevatum, apice acutum, antice versus basin tuberculo lato, compresso; tarsi antici ungue majore sicut in *L. mniszechi* deflexo, medio subtus dilatato basique acute dentata.

Long. ♂ 32 millim.; ♀ 28 millim.

Hab. Nicaragua, Chontales (*Belt*).

One pair only. *Lycomedes reichei* has a totally different form of thoracic horn.

Subfam. *PHILEURINÆ.*

PHILEURUS.

Phileurus, Latreille, Gen. Crust. et Ins. ii. p. 103 (1807); Burmeister, Handb. der Ent. v. p. 148; Lacordaire, Gen. Col. iii. p. 456.

A well-known genus, of wide distribution in tropical and temperate regions throughout the globe, but absent from Europe, including the Mediterranean subregion, Australasia, and Chili. *P. subcostatus*, Casteln., from Australia, belongs to the genus *Semanopterus*. The great majority of the species inhabit the Tropical and the warmer temperate zones of America.

I. *Outer apical angle of the posterior tibiæ not spiniform.*

1. **Phileurus cribrosus.**

Phileurus cribrosus, Leconte, Proc. Ac. Phil. 1854, p. 80; Journ. Ac. Phil. iv. 1858, t. 4. fig. 19[1]; Horn, Trans. Am. Ent. Soc. viii. p. 147, t. 3. fig. 6 (1880)[2].

Hab. North America, New Mexico [1], Texas [2].—Mexico, Nuevo Laredo in Tamaulipas, Villa Lerdo in Durango (*Höge*), Monclova in Coahuila (*Dr. Palmer*).

Allied to *P. fimbriatus*, Burm., from S. Brazil and Uruguay. The elytra are shorter and more rounded than in the typical *Phileuri*, and very coarsely striate-punctate. The head bears no trace of horns, but is transversely carinated. In the male the pygidium is conically convex, in the female plane. The size varies from 14 to 16 millim.

2. **Phileurus simplex.**

Oblongus, nigro-nitidus, sternis breviter vulpino-rufo pubescentibus pedibusque piceis; capite tenuiter arcuatim strigoso, clypeo acute reflexo, fronte bituberculata extus nullo modo carinata, cantho oculari subito rotundato-dilatato; thoracis lateribus cum angulis posticis sat rotundatis, sulco dorsali punctato nec apicem nec basin attingente, antice nec tuberculato, disco anteriore sparse punctato, cætero lævi; elytris regulariter sat grosse punctato-striatis, apice confuse grosse punctatis. Tibiæ anticæ tridentatæ, 4 posticæ carinis et apice breviter spinoso-setosis nec dentatis, apice extus tantum obtuse producto; tarsi postici articulo basali extus longe spinoso. ♀. Pygidium medio transversim valde gibbosum, sparse grosse punctatum.

Long. 22 millim. ♀.

Hab. Nicaragua, Chontales (*Belt, Janson*).

Two female examples. The species is closely allied to *P. vervex*, Burm., but differs from it in the head above being nearly plane and without carinæ connecting the frontal tubercles with the sides and apex of the clypeus. The pubescence beneath is also much shorter and thinner.

II. *Outer apical angle of the posterior tibiæ spiniform.*

A. *Anterior tibiæ tridentate.*

3. **Phileurus lævicauda.** (Tab. XXI. fig. 3, ♂.)

P. depresso proxime affinis, differt ventris segmento apicali fere lævi pygidioque grosse punctato. Oblongus, nigro-nitidus, subtus pronoti lateribus solum rufo-hirtis; capite grosse punctato, clypeo acuminato-reflexo, fronte tuberculis compresso-conicis duobus, cantho oculari lobiformi capitisque lateribus ante canthum acute angulatis ubi carina a basi tuberculi desinit; thorace grosse punctato, disco utrinque et basi lævibus, sulco dorsali multo abbreviato punctato; elytris regulariter punctato-sulcatis, striola scutellari nulla; pectoris lateribus coxisque posticis grosse umbilicato-punctatis. Pygidium grosse punctatum, ♂ mediocriter convexum, ♀ planum; segmento ultimo ventrali basi solum punctato. Tibiæ 4 posticæ medio et apice spina elongata et valida.

Long. 22 millim. ♂ ♀.

Hab. Mexico, Tapachula in Chiapas (*Höge*); Guatemala, El Reposo, Teleman in Vera Paz (*Champion*).

4. **Phileurus —— ?**

Hab. Mexico, Playa Vicente (*Sallé*).

A single old and worn example of a species which may be a variety of the Colombian

P. variolosus, Burm., from which it differs only in the punctures being smaller, and on the thorax less close and evenly distributed.

5. **Phileurus cylindroides.** (Tab. XX. figg. 15, 15 *a*, ♂.)

Angustior, elongatus, subcylindricus, nigro-nitidus, prosterno subtus vulpino-pubescente; capite basi ♂ impunctato, polito, ♀ rugoso-punctato, clypeo acuminato-reflexo, cantho oculari lobato et anterius utrinque angulato, fronte in ♂ erecte bicornuta, in ♀ tuberculis duobus latis conicis; thorace plus minusve grosse annulato-punctato, sulco dorsali lato, grosse confluenter punctato, basin versus plerumque lævi, margine antico haud tuberculato; elytris punctato-sulcatis, punctis grossis et umbilicatis, interdum minoribus et sulcis minus profundis hinc interstitiis latioribus; sternis et coxis posticis grossissime discrete punctatis. Pygidium grosse punctatum, ♂ valde convexum, ♀ fere planum; segmentum apicale ventrale impunctatum.

Long. 18–21 millim. ♂ ♀.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Capetillo (*Champion*); Costa Rica, Volcan de Irazu 6000 to 7000 feet, Rio Sucio (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

A male from Rio Sucio is shown on our Plate.

6. **Phileurus dejeani.** (Tab. XX. figg. 19, 19 *a*, ♂.)

P. depresso affinis, sed convexior, elytrorum interstitiis alternis valde elevatis etc. Elongato-oblongus, sat convexus, nigro-nitidus, femoribus rufo-piceis; capite ♂ antice fere lævi, ♀ grosse alveolato-punctato, clypeo acuminato-reflexo carinis postice divergentibus validis, cantho oculari subquadrato prominente denteque anteriore valido, fronte ♂ cornibus duobus brevibus erectis, ♀ tuberculis basi dilatatis subconicis; thorace grosse et antice dense umbilicato-punctato sulcoque dorsali profundo, lato et grosse confluenter punctato, margine antico haud tuberculato; elytris grossissime umbilicato-punctato-striatis, interstitiis 3° et 5° elevatis et incrassatis, 2° et 4° apud basin solum elevatis postice depressis et angustatis; metasterno fere toto sat grosse punctato. Pygidium grossissime punctatum, ♂ et ♀ paullo convexum; segmentum apicale ventrale basi tantum punctulatum; tibiæ 4 posticæ extus spinis mediana et apicali latis.

Long. 17–23 millim. ♂ ♀.

Hab. Mexico, Cordova, Toxpam (*Sallé*), Jalapa (*Höge*); Guatemala, Cerro Zunil (*Champion*).

I have adopted the MS. name given to this species in the Sallé collection. It is very closely allied to *P. cylindroides*, but is distinguishable in all the numerous examples by its costate elytra, as well as by its broader and more robust form. *P. dejeani* is not much more convex than *P. valgus* or *P. depressus*.

We figure a male example from Toxpam.

7. **Phileurus truncatus.**

Scarabæus truncatus, Palisot de Beauvois, Ins. Afr. et Amér. p. 41, t. 1 *b*. fig. 4.

Phileurus truncatus, Burm. Handb. der Ent. v. p. 157[1]; Horn, Trans. Am. Ent. Soc. viii. pp. 147, 148 (1880)[2].

Hab. North America[1], from North Carolina southward[2].—Mexico, Cordova (*Sallé*).

There is only one example of this species in the Sallé collection, others also labelled *P. truncatus* being the superficially very similar *P. quadrituberculatus*.

B. *Anterior tibiæ quadridentate.*

8. **Phileurus didymus.**

Scarabæus didymus, Linn. Syst. Nat. i. 2, p. 545; Oliv. Ent. i. 3, p. 42, t. 2. fig. 9.
Phileurus didymus, Burm. Handb. der Ent. v. p. 158.
Phileurus bajulus, Casteln. Hist. Nat. Ins. Col. ii. p. 116 (nec Perty).
Phileurus affinis, Reiche, Ann. Soc. Ent. Fr. 1859, p. 12 (nec Burm.).

Hab. Mexico, Cordova (*Sallé, Höge*), Toxpam (*Sallé*), Jalapa, Tapachula in Chiapas (*Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, Cerro Zunil (*Champion*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Van Patten*); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Varies in size from 28 to 50 millim. The thoracic tubercle on the fore margin followed by a broad depression, from which commences the dorsal sulcus, are constant characters in all the examples; but the quadridentate anterior tibiæ is subject to exceptions, as the upper tooth is sometimes scarcely perceptible, or disappears altogether. The tridentate *P. affinis,* Burm., which is reunited by Reiche and Gemminger and Harold as a var. to *P. didymus,* is, however, probably a distinct species, as it differs in the absence of the broad pit behind the thoracic tubercle, whilst the *P. affinis* described by Reiche as distinct is clearly the same as *P. didymus,* the absence of a scutellar striole, adduced as the sole character, being of common occurrence in the species.

9. **Phileurus microps.**

Phileurus microps, Burm. Handb. der Ent. v. p. 161 [1].

Hab. Mexico [1] (*Sallé, ex coll. Sturm*).

A single example from Sturm's collection, agreeing very well with Burmeister's description.

10. **Phileurus valgus.**

Scarabæus valgus, Linn. Syst. Nat. i. (2) p. 546; Oliv. Ent. i. 3, p. 43, t. 17. fig. 160.
Phileurus valgus, Burm. Handb. der Ent. v. p. 160 [1]; Horn, Trans. Am. Ent. Soc. viii. p. 147 (1880) [2].
Phileurus castaneus, Haldem. Proc. Ac. Phil. i. p. 304.

Hab. North America, Texas [2].—Mexico, Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, El Reposo (*Champion*).—South America, Colombia to S. Brazil [1]; West Indies [1].

Var. *P. capra* (Dej., coll. Sallé). Major (28 millim.), tibiis 4 posticis extus medio fortius denticulatis spinisque apicalibus longioribus, elytrorumque interstitiis haud alternatim elevatis.

Hab. Guatemala, Yzabal (*Sallé*).

The largest examples of this species are distinguished from the smallest of *P. didymus,*

which they much resemble, by the very different armature of the four hind tibiæ, which have two spines or long teeth at the outer apex instead of one, and on the median ridge a row of denticulations, ending sometimes with a short spine. In the var. *capra* the spines and denticulations are much stronger than in the type. The size of *P. valgus* typ. varies from 16 to 24 millim.

11. **Phileurus quadrituberculatus.**

Scarabæus quadrituberculatus, Palisot de Beauv. Ins. Afr. et Amér. p. 42, t. 1 *b.* fig. 5.
Phileurus quadrituberculatus, Burm. Handb. der Ent. v. p. 162[1].
Phileurus bajulus, Perty, Del. Anim. Art. Bras. p. 44, t. 9. fig. 7[2].
Phileurus cephalotes, Casteln. Hist. Nat. Ins. Col. ii. p. 116.

Hab. Mexico[1]; British Honduras, Belize (*Blancaneaux*); Honduras, Ruatan Island (*Gaumer*); Nicaragua, Chontales (*Belt*, *Janson*).—South America to Brazil[1 2].

The four hinder tibiæ in this species have three strong teeth at their outer apex, and a row of broad and strong denticulations on the median ridge.

AMBLYODUS.

Amblyodus, Westwood, Trans. Ent. Soc. Lond. 1878, p. 32.

The following is the only known species of this genus, distinguished from *Phileurus* chiefly by the tridentate mandibles. In this feature it agrees with *Trioplus*, to which genus it is very closely allied, differing chiefly by the simple fore-tarsal claws in the male and the entire apex of the clypeus.

1. **Amblyodus taurus.** (Tab. XXI. fig. 2, ♂.)

Amblyodus taurus, Westw. Trans. Ent. Soc. Lond. 1878, p. 32, t. 2. figg. 1 *a–e*[1].

Hab. Nicaragua, Chontales (*Belt*[1]); Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Three examples, including the type-specimen of Westwood.

The specimen described by Prof. Westwood has only two teeth on the right mandible, but as the two other examples (♂ ♀) have both mandibles tridentate, it appears probable that the bidentate state in this case is an aberration. The female (recognizable, as usual in the Dynastidæ, by the entire apical margin of the apical ventral segment) is precisely similar to the male, except that the cephalic horns are very much shorter, and the declivous anterior surface of the thorax is only half as large. I suspect, however, that the difference is not always so great, as the females in *Trioplus* are almost exactly similar to the well-developed males, whilst minor males have much shorter cephalic horns.

Fam. CETONIIDÆ.

Subfam. *ISCHNOSTOMINÆ.*

ISCHNOSCELIS.

Ischnoscelis, Burmeister, Handb. der Ent. iii. p. 179 (1842); Lacordaire, Gen. Col. iii. p. 489.

This genus, interesting as displaying an affinity with the Goliathinæ group of Africa and Asia, so far at least as the cornuted head of the males is concerned, seems peculiar to Mexico. Two species have been described, widely dissimilar in size, colour, length, and clothing of the male fore legs, and to a lesser extent in the armature of the head, but closely agreeing in all essential points of structure.

1. Ischnoscelis hopfneri.

Goliathus hoepfneri, Gory & Percheron, Monogr. Cétoin. p. 154, t. 26. fig. 2 [1].
Ischnoscelis höpfneri, Burm. Handb. der Ent. iii. p. 182 [2]; Westw. Linnæa Entom. x. p. 326, t. 2.

Hab. Mexico [1 2] (*Sturm, in coll. Sallé*).

There are two examples only, a male and a female, of this rare species in the Sallé collection.

2. Ischnoscelis dohrni.

Ischnoscelis dohrnii, Westw. Linnæa Ent. x. p. 326, t. 2 [1].

Hab. Mexico [1], Sonora (*in coll. Bates*).

Subfam. *GYMNETINÆ.*

ARGYRIPA.

Argyripa, Thomson, Typi Cetonid. p. 11 (1878).
Allorhina, pars, Sallé, Bates (olim), Westwood.

Three species of this beautiful genus have been described, remarkable for the curious armature of the head and thorax in the males. The group appears to be restricted to Central America and the neighbouring North-western parts of South America.

1. Argyripa lansbergei.

Allorhina lansbergei, Sallé, Ann. Soc. Ent. Fr. 1857, p. 617, t. 13. no. iii. figg. 1, 1 *a–c*.[1]
Allorhina hypoglauca, Westw. Trans. Ent. Soc. Lond. 1874, p. 475, t. 7. fig. 6 [2].
Argyripa lansbergei, Thomson, Typi Cetonid. p. 11.

Hab. Nicaragua [2].—Colombia [1].

This species is not contained in our collections and does not appear to have been

met with by either Belt or Janson during their lengthened residence in the eastern part of Nicaragua.

2. **Argyripa anomala.** (Tab. XXI. figg. 15, ♂; 17, ♀, var.)

Allorhina anomala, Bates, Trans. Ent. Soc. Lond. 1869, p. 388 (♂)[1].

♀. A ♂ differt solum capite et thorace inermibus; clypeo quadrato, plano, marginibus reflexis, apicali medio paullo altiore; tibiis anticis extus (dente apicali excepto) inermibus ventreque albo polito nigro-punctato, segmentis 2°–5ᵐ medio antice macula nigra transverso-ovata.

Var. ♂ ♀. Thorax margine toto flavo-cretaceo, nigro-punctato.

Hab. Nicaragua, Chontales (*Belt* [1]).

3. **Argyripa subfasciata.** (Tab. XXII. figg. 2, 2 *a*, ♂; 3, 3 *a*, ♂, var.)

Argyripa subfasciata, Ritsema, Notes from the Leyden Mus. 1885, p. 41, t. 3. fig. 2 (♀)[1]; O. Janson, loc. cit. 1888, p. 118, fig. 119 (♂)[2].

Hab. Panama, Chiriqui[2] (*Trötsch*), Bugaba (*Champion*).—Colombia[1].

One of Mr. Champion's examples represents a variety (fig. 3) of this beautiful species in which the dark purple velvety elytra are unicolorous, with the exception of four rather small yellow marginal spots in the situation of the lateral terminations of the fasciæ and apical spot of the typical form. Mr. Janson in describing the male calls attention to the extraordinary form of the mentum, the disc of which is produced as a stout vertical spine, remarking, justly, that no trace of this exists in the male of *A. anomala*, and only a slight indication of it in the male of *A. lansbergei*.

We figure two male examples from Bugaba.

CHIRIQUIBIA.

Gen. *Allorhinæ* affinis, sed differt capite maris absque cornu frontali, fronte ab occipite longitudinaliter usque ad cornu clypeale obtusissime carinata. Clypeus apice medio cornu mediocri erecto, bifido, capite margine utrinque prope oculos alte et acute elevato, apice acuto et libero. Tibiæ 4 posticæ sat graciles, inermes, anticæ (♂) apice extus in spinam acutam prolongatæ et obsolete obtusissime bidentatæ. Processus sternalis (sicut in *Cotine*) latus, planus, apice late rotundatus. ♀ ignota.

One fine and large species only is known of this genus. The absence of horizontal frontal horn necessitates its separation from *Allorhina* (incl. *Tiarocera*, Burm.), from the species of which it also differs strikingly in colour and markings.

1. **Chiriquibia insignis.** (Tab. XXII. figg. 1, 1 *a*, ♂.)

Allorhina insignis, O. Janson, Notes from the Leyden Mus. 1888, p. 119[1].

Hab. Panama, Chiriqui[1] (*Trötsch*).

COTINIS.

Cotinis, Burmeister, Handb. der Ent. iii. p. 254 (1842).
Latemnis, Thomson, Le Naturaliste, i. p. 268 (1880).
Balsameda, Thomson, loc. cit.

The species with emarginated clypeus and long spiniform teeth at the apex of the four hind tibiæ (genera *Amithao* and *Desicasta*) being withdrawn, this genus is here left as defined by Burmeister. It includes about twenty species distributed throughout the tropical and north temperate zones of America, and distinguished by having the same armature of the head in both sexes, namely an erect clypeal horn often much reduced, until in the aberrant forms it consists of a barely perceptible median elevation of the reflexed apex of the clypeus, and a horizontal frontal horn, which likewise is sometimes partly atrophied, but in the most aberrant species is visible as a tolerably distinct central carina. The genus *Latemnis* of Thomson I consider as certainly congeneric with *Cotinis*, but *Balsameda* is rather better defined, consisting of those species in which the external posterior angles of the hindmost coxæ are obtuse and not acutely produced as in the rest of the genus; the armature of the head remains, however, normal, and I think it advisable to retain it as a section of *Cotinis*.

I. *Coxæ posticæ angulis posticis subfalcato-productis.*

1. **Cotinis laticornis.** (Tab. XXII. figg. 6, 6 *a*, ♀.)

C. barthelemyi affinis. Subelongato-oblonga, thorace quam in *C. mutabili* postice multo angustiore; cornu clypeali apice late dilatato et tridenticulato, dente intermedio obtuso, cornu horizontali frontali apice longe libero et recte porrecto. Caput, thoracis margine lato (et interdum linea angusta dorsali), epimeris corporeque subtus viridi-metallicis, nitidis, elytris velutinis fusco-purpureis vel fusco-fulvis versus suturam viridi-obscuris; thorace disco viridi-velutino, margine nitido, rugoso-punctato; pygidio sparsius quam in *C. mutabili* transversim striguloso; pectore, ventris lateribus et tibiis 4 posticis intus fulvo-rufo pilosis. Tibiæ 4 posticæ medio extus carina denticulata, apice late et obtuse dentatæ; anticæ ♂ apice extus valide dentatæ, supra biflexuosæ interdum unidentatæ, ♀ bidentatæ. Processus sternalis latus, planus, parte mesosternali fere sicut in *C. mutabili*, sed paullo angustiore.

Long. 27–35 millim.; lat. thor. basi 10–13 millim. ♂ ♀.

Hab. Mexico, Sonora (*coll. Bates*), Villa Lerdo in Durango, Tupataro in Guanajuato (*Höge*), Guanajuato (*Sallé*), Mexico city (*Dr. Palmer, Flohr*).

A good number of examples of both sexes, in all of which the clypeal horn is greatly dilated at the apex and more or less distinctly tridentate. This character, added to the tawny or rich purple-brown colour of the elytra, distinguishes the species well from *C. barthelemyi* of Colombia.

We figure an example from Mexico city.

2. **Cotinis mutabilis.** (Tab. XXI. fig. 5; Tab. XXII. figg. 4, 4 *a*, 5, 5 *a*, 12, 12 *a*, vars.)

After careful examination of about 250 examples I have come to the conclusion that the characters adduced by Burmeister to distinguish this species from *C. sobrina* are in the highest degree inconstant, and that there are no means of defining the two species. All that can be said is that *C. mutabilis* is, in the great majority of its individuals, larger and broader. The shape of the clypeal horn is very variable, and its varieties do not correspond with variations in size, breadth, and colour, large and robust specimens of the typical *mutabilis* having the horn either dilated towards the apex, parallel-sided, or triangular, and the same diversities may be seen in small and slender oblong examples of *C. sobrina*. It is the same with regard to form and colour; for it is far from the case that the large and broad examples (*C. mutabilis*) only are unicolorous; smaller and narrower individuals exist equally unicolorous and of nearly all the colour-varieties displayed by the larger set. It is true that the variegated varieties described by Burmeister under *C. sobrina* are, as a rule, smaller than the others; but they are connected by the most finely graduated series of variations, so that it is impossible to draw a distinction between the two series. The case is a very difficult one to deal with. It would not be satisfactory, and scarcely practicable, to include under one specific diagnosis all the numerous varieties, some of which are possibly local, thus presenting an interesting study to future collectors and students; the better course seems to be to treat the more distinct separately, giving the localities of each:—

Typical form.—*Gymnetis mutabilis*, Gory & Perch. Monogr. Cétoin. p. 334, t. 66. fig. 5[1]; *Cotinis mutabilis*, Burm. Handb. der Ent. iii. p. 255[2]. Robusta, supra viridis, opaca, subtus splendide viridi-ænea vel viridi-aurata, ventre interdum flavo-translucente; cornu clypeale plerumque quadratum vel apice paullo dilatatum et subsinuatum, sed interdum breve obtuse triangulare.

Hab. Mexico [1] [2], Matamoros Izucar in Puebla, Jalapa (*Höge*), Cordova, Vera Cruz, Campeche (*Sallé*), Temax in North Yucatan (*Gaumer*); ? Costa Rica (*Van Patten*).

Var. 1. Eadem, sed corpore subtus saturatius viridi-æneo vel subchalybeo.

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, near the city alt. 5000 feet (*Salvin*), Volcan de Atitlan (*Champion*).

Var. 2. *Gymnetis mexicana*, Gory & Perch. Monogr. Cétoin. p. 335, t. 67. fig. 1[1]; *Cotinis sobrina*, var., Burm. Handb. der Ent. iii. p. 256[2]. Paullo minor et angustior; quoad colores *C. mutabilis* formæ typicæ similis.

Hab. Mexico [1] [2], Cuernavaca (*Sallé*, *H. H. Smith*), Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, Chimaltenango (*Conradt*).

Var. 3. Var. 2 quoad formam similis, sed interdum robustior, differt elytrorum lateribus et versus apicem obscure rufo-translucentibus; cornu clypeale variabile.

Hab. Mexico, North Yucatan (*Gaumer*); Guatemala, San Gerónimo (*Champion*).

Var. 4. *Cotinis cuprascens.* Supra aureo- vel cupreo-fusca, subtus aurata, cupreo-aurata, vel rufo-cuprea; magna, robusta; cornu clypeale quadratum. (Tab. XXI. fig. 5.)

Hab. Mexico, Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Nicaragua, Chontales (*Belt*).

Sent in abundance by Mr. Gaumer from Northern Yucatan.

Var. 5. Var. *cuprascenti* quoad colores simillima, sed plerumque multo minor et cornu clypeali brevi triangulari.

Hab. Mexico, Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, San Gerónimo (*Champion*).

Var. 6. *C. subcastanea.* Robusta, supra cuprascenti- vel castaneo-fusca, subtus et pedes castaneo-rufa, pectore nigro-castaneo; cornu clypeale plerumque elongatum, lateribus parallelis.

Hab. Mexico, Jalapa (*Höge*).

Var. 7. *Gymnetis nigrorubra*, Gory & Perch. Monogr. Cétoin. p. 332, t. 66. fig. 1 [1]. Magna, robusta, supra subpurpureo-nigra; cornu clypeale plerumque altum, lateribus parallelis sed interdum (individuis magnis) breve obtuse triangulare. Long. 28–34 millim. ♂ ♀.

Hab. Mexico [1], Puebla, Cordova, Juquila (*Sallé*), Putla (*Boucard, coll. Bates*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, near the city (*Salvin*), San Gerónimo, Coban and Tamahu in Vera Paz (*Champion*), Chimaltenango (*Conradt*).

Var. 8. *Gymnetis atrata*, Gory & Perch. Monogr. Cétoin. p. 330, t. 65. fig. 4 [1]. Plerumque minor et paullo angustior, sed interdum magna et lata, aterrima; cornu clypeale apice acuminatum sed interdum obtusum. Long. 20–30 millim. ♂ ♀.

Hab. Mexico [1], Puebla (*Sallé, Höge*), Atlixco, Cordova, Jalapa (*Höge*), Cuernavaca (*Höge, H. H. Smith*); Guatemala, Coban in Vera Paz (*Conradt*).

Sometimes there is a trace of red marginal vitta on the elytra, which connects this variety with the following.

Var. 9. *Cotinis sobrina*, var. *cabira*, Burm. Handb. der Ent. iii. p. 256 [1]. Var. *atratæ* similis, differt tantum elytrorum vitta laterali vel vittis laterali et discoidali (apice conjunctis) et thoracis margine saturate rufis, vittis interdum obsoletis vel maxime dilatatis.

Hab. Mexico [1], Puebla (*Sallé, Höge*), Atlixco, Jalapa, Cordova (*Höge*).

The clypeal horn is in all our examples triangular; in some broader and obtuser than in others.

Var. 10. *C. intergenea.* Var. *cabiræ* individuis gracilioribus similis, thoracis lateribus elytrisque vittis latissimis interfusis obscure rufis; sed cornu clypeale sicut in forma maxima typica latum et altum, apice paullo dilatato et summo sinuato; corpore subtus et pedibus fere sicut in var. *subcastanea* castaneis vel cupreo-castaneis. Long. 24 millim. ♂. (Tab. XXII. figg. 5, 5 *a*.)

Hab. Mexico, Jalapa (*Höge*).

Two examples, one almost exactly similar in form and colour to a specimen of var. *cabira* in which the obscure red vittæ of the elytra are dilated and extend over the whole surface leaving only a broad sutural vitta (narrowed behind) of the blackish

ground-colour; the other precisely similar in form, but with the reddish stripe and thoracic margins less distinct and the underside reddish-castaneous, slightly cupreous.

Var. 11. *Gymnetis palliata*, Gory & Perch. Monogr. Cétoin. p. 336, t. 67. fig. 2[1]; *Cotinis sobrina*, var. *b*, Burm. Handb. der Ent. iii. p. 256[2]. Viridis, subtus resplendens, sicut in *C. mutabili* typica, sed elytrorum vitta laterali, et interdum lateribus thoracis, obscure rufis; minor, corpore graciliore cornuque clypeali brevi triangulari; variat corpore robustiore, cornu clypeali altiore, lateribus subparallelis, et vitta laterali elytrorum obscura.

Hab. Mexico[1 2], Ciudad in Durango (*Forrer*), Toltepec (*Sallé*), Mexico city (*Dr. Palmer*), Jalapa, Almolonga, Matamoros Izucar in Puebla (*Höge*).

The red lateral stripe of the elytra is sometimes very ill-defined from the green ground-colour and in other examples reduced to a narrow border; this form, in short, graduates into the variety *mexicana*.

Var. 12. *Cotinis aurantiaca*. Magis robusta et quadrata (♂ ♀), supra lætius viridi vittaque laterali elytrorum aurantiaca-flava et magis distincta (raro interrupta vel obsoleta); subtus viridi-metallica, ventre sæpe rufo; cornu clypeale breve triangulare, late triangulare et obtusum vel quadratum. Long. 21–30 millim. ♂ ♀. (Tab. XXII. figg. 4, 4 *a*.)

Hab. Mexico, Ciudad in Durango 8100 feet (*Forrer*), Alamos, Pinos Altos in Chihuahua (*Buchan-Hepburn*), San Luis Potosi (*Dr. Palmer*), Istepec (*Sallé*).

Has the facies of a distinct species and the sternal process is somewhat longer; but the form graduates into *C. palliata*.

An example from Alamos is shown on our Plate.

Var. 13. *Gymnetis sobrina*, Gory & Perch. Monogr. Cétoin. p. 336, t. 67. fig. 3[1]; *Cotinis sobrina*, var. *c*, Burm. Handb. der Ent. iii. p. 256[2]. Viridis, subtus viridi-aurata, thorace vel concolor vel lateribus irregulariter fulvis, elytrorum vittis duabus latis obliquis ante apicem conjunctis fulvis. Quoad formam plerumque (♂ ♀) minor et gracilior, sed interdum (♀) lata et robusta; cornu clypeale latius vel angustius triangulare, raro elongatum et parallelogrammicum.

Hab. Mexico[1 2], Istepec, Guanajuato, Oaxaca (*Sallé*), Matamoros Izucar in Puebla, Almolonga (*Höge*).

Var. 14. *Cotinis robusta*. A cæteris varietatibus differt statura multo majore oblongior; subtus viridi-metallica, supra viridi-obscura, thorace lateribus elytrisque (plaga juxtascutellari excepta) fulvis; cæteris sicut in *C. sobrina* et *C. malina*. Long. 30 millim. ♂.

Hab. Mexico, Sonora (*coll. Bates*).

Var. 15. *Cotinis obliqua* (*sobrina*, var. *d*), Burm. Handb. der Ent. iii. p. 256[1]; *C. malinus*, O. Janson, Cist. Ent. ii. p. 575[2]. Viridis, subtus viridi- interdum aureo-viridi-metallica, thoracis vitta marginali (plerumque quoque vitta dorsali vel macula postica) elytrisque toto (vitta vel plaga magna basali et suturali excepta) ochreo-fulvis; cornu clypeale variabile, parvum triangulare vel major, truncatum vel alte quadratum, venter interdum rufescens. (Tab. XXII. figg. 12, 12 *a*.)

Hab. Mexico[1 2], Parras and Saltillo in Coahuila, San Luis Potosi (*Dr. Palmer*), Ventanas in Durango (*Höge*), Guanajuato (*Sallé*), Mexico city (*H. H. Smith*, *Dr. Palmer*).

Passes by insensible gradations into *C. sobrina* and exhibits the same great diversity

of general form of body; some examples (♂) are small (19 millim.) and narrow, others (♂) remarkably elongate (28 millim.) without corresponding width and with high parallel-sided clypeal horn, whilst others (♀, 26 millim.) have the broad oblong-ovate outline of *C. mutabilis* typical form. Male examples also occur with a clypeal horn so excessively reduced that it appears only as a small obtusely triangular elevation.

An example from Guanajuato is figured.

3. **Cotinis punctato-striata.** (Tab. XXII. figg. 9, 9, *a* ♂.)

C. mutabilis varietatibus minoribus similis, sed differt elytris scintillanter punctulato-striatis. Colore variat:—(1) Viridi-concolor (subtus aurato-viridis metallica); (2) viridis, elytrorum vitta laterali usque ad suturæ apicem extensa obscure rufa; (3) viridis, thoracis lateribus vittaque dorsali et elytris toto (sutura et plaga magna triangulari juxtascutellari exceptis) obscure fulvis; (4) cupreo-aurata, subtus resplendens rufo-relucens; et (5) purpureo-fusca, subtus castanea haud metallica. Cornu clypeale sat elongatum, plerumque triangulare acutum, interdum truncatum, raro lateribus subparallelis; cornu frontale interdum angustum, apice haud longe liberum. Pygidium et processus sternalis sicut in *C. mutabili*.

Long. 21–25 millim. ♂ ♀.

Hab. Mexico, Vera Cruz (*Sallé*), Almolonga, Jalapa (*Höge*); Nicaragua, Granada (*Sallé*).

The shining punctured striæ are visible chiefly in the depressed intervals between the suture and the first costa and between the two costæ; they are in each interval two in number, and the space between the first pair is irregularly punctured; the apex between the callus and the suture is also more or less punctured. The males are slenderly oblong, like the smallest males of *C. mutabilis*; the females are more robust and subquadrate. The species was captured in abundance by Herr Höge at Almolonga; it is in many points intermediate between *C. mutabilis* and *C. pauperula*.

The single female example from Granada, Nicaragua, differs from all the others in its larger size (28 millim.), and broader, more robust figure. It resembles, in fact, closely, certain Guatemalan examples of *C. mutabilis*, typical form, which have a broadly triangular clypeal horn, except in the numerous shining green punctures of the elytra.

4. **Cotinis pauperula.** (Tab. XXII. fig. 13.)

Cotinis pauperula, Burm. Handb. der Ent. v. p. 550[1].

Hab. Mexico[1], Acapulco (*J. J. Walker*, *Höge*), Iguala in Guerrero (*Höge*), Yolotepec (*Sallé*).

Smaller in size and more slender in form than any but exceptionally dwarfed examples of *C. mutabilis* or than *C. punctato-striata*. It agrees with the latter in the punctate-striate elytra, but the punctures are opaque; and it also differs in the frontal horn being reduced to a sharp carina, never free, though nearly always vertically truncated at the extremity. The clypeal horn is always very short and triangular, and the sternal process somewhat narrow and rather more acutely rounded at the apex than in *C. mutabilis*.

The margins of the thorax are distinctly less broadly incrassated than in *C. mutabilis* and *C. punctato-striata*; in this respect the species approaches the North-American *C. nitida*. The colour varies: (1) dullish green, very dark and tinged with brassy beneath; (2) the same, with the margins of the thorax and the whole of the elytra, except a broad triangular juxtascutellar patch, dull fulvous; (3) wholly fulvous above, except the disc of the thorax, which remains green; (4) thorax and elytra entirely fulvous. The length ranges from 21 to 23 millim.

5. **Cotinis pueblensis.** (Tab. XXII. figg. 11, 11 *a*.)

C. pauperulæ quam proxime affinis, sed differt duplo majore et robustiore; nigro-viridis, opaca, elytrorum lateribus obscure rufo translucentibus, subtus nigro-ænea, nitida; carina frontali antice leviter declivi, cornu clypeali late triangulari; thoracis margine latius incrassato, antice obsoleto et cum lateribus sparsim grosse punctato; elytris passim grosse striato-punctatis; processu sternali antice (parte mesosternali) transverso et subacute rotundato; metasterno coxisque posticis angulis postero-externis sicut in *C. mutabili* et affinibus acute productis; subtus pubescentia vulpino-rufa.

Long. 28 millim. ♂ (?).

Hab. Mexico, Matamoros Izucar in Puebla (*Höge*).

Possibly a local or geographical form of *C. pauperula*. One example only.

6. **Cotinis producta.**

Elongato-oblonga, viridis, opaca, subtus metallica, elytris fulvis, sutura et plaga juxtascutellari viridibus; cornu clypeali brevi, latissimo, apice paullo dilatato, postice concavo-arcuato apice truncato; cornu frontali fere usque ad cornu clypeale extenso, apice fere verticali vix libero; thorace postice minus dilatato, passim sat grosse punctato, lateribus late glabris nitidis, margine sat incrassato ante apicem obsoleto; elytris punctulato-striatis; pygidio sicut in affinibus dense striguloso; processu sternali brevi, parte mesosternali parva triangulari; tarsi breves et robusti, posticis articulis 1°–4ᵐ longitudine æqualibus.

Long. 27 millim. ♂ (?).

Hab. Mexico, Sonora (*coll. Bates*).

One example only.

7. **Cotinis lebasi.** (Tab. XXI. fig. 6.)

Gymnetis Lebas, Gory & Perch. Monogr. Cétoin. p. 335, t. 66. fig. 3 [1].

Cotinis Lebasi, Burm. Handb. der Ent. iii. p. 258 [2].

Hab. Panama, Chiriqui (*Ribbe*), Bugaba, Taboga Island (*Champion*), Panama city (*J. J. Walker*).—Colombia [1 2].

About a score examples answering to the above-cited descriptions and figure, except with regard to the pygidium, the great peculiarity of which, namely its opaque surface, is not mentioned. The insect is of the broad robust form of the typical *C. mutabilis* (28–35 millim.), though rare examples occur of rather smaller and narrower outline; the colour above is dark olivaceous-green, beneath red-coppery, inclined to æneous in Taboga Island examples. It differs constantly from *C. mutabilis*, apart from the opaque

pygidium, in the frontal horn having only a short free extremity, the sides of the thorax simply rounded, and in the mesosternal part of the sternal process being much broader and shorter. It is remarkable that the clypeal horn, so variable in form in *C. mutabilis*, is here always very short and triangular.

Found in rotten pine-apples and other fruits (*Champion*).

8. **Cotinis subviolacea.**

Gymnetis subviolacea, Gory & Perch. Monogr. Cétoin. p. 333, t. 66. fig. 6[1].
Cotinis subviolacea, Burm. Handb. der Ent. iii. p. 259[2].

Hab. Mexico[1 2], Cordova, Tuxtla (*Sallé*), Jalapa (*Höge*), Teapa, Orizaba (*H. H. Smith*), Temax and Valladolid in Yucatan (*Gaumer*); Guatemala (*Sallé*), Coban in Vera Paz (*Conradt*).

Varies from glossy black through violaceous, purple-brown, on to brassy-green. Some examples show faint rows of punctures on the elytra, and in others the clypeal horn is obsolete, or visible only as an indistinct triangular fold of the posterior edge of the front margin.

9. **Cotinis plicatipennis.**

Cotinis plicatipennis, Blanch. Cat. Coll. Ent. i. p. 33[1].

Hab. Mexico[1], Jalapa (*Salle, Höge*).

Probably only a variety of *C. subviolacea*, but besides the transverse inequalities and folds of the elytral surface, which constitute its sole structural difference, the colours are more brilliant—golden or brassy-green and sometimes lustrous coppery.

10. **Cotinis viridicyanea.**

Gymnetis viridicyanea, Perbosc, Rev. Zool. 1839, p. 262[1].
Cotinis viridicyanea, Schaum, Ann. Soc. Ent. Fr. 1844, p. 356.
Cotinis subviolacea var. *viridicyanea*, Burm. Handb. der Ent. iii. p. 259.

Hab. Mexico[1], Campeche (*Salle*), Temax in North Yucatan (*Gaumer*).

Sent in abundance from Temax by Gaumer.

11. **Cotinis polita.**

Cotinis polita, O. Janson, Cist. Entom. ii. p. 133[1].

Hab. Nicaragua, Chontales (*Janson*[1]); Panama, Bugaba (*Champion*), Chiriqui (*Trötsch*).

A glossy black species, with frontal carina gradually lowering and not free at its extremity.

12. **Cotinis olivia.** (Tab. XXI. fig. 10.)

C. politæ affinis, sed differt hirsutie pedum et pectoris vulpino-rufa nec nigra, coloreque olivaceo-viridi vel æneo-olivaceo; glabra, metallica. A *C. subviolacea* differt corpore angustiore, cornu clypeali nullo sed clypei margine antice acute rotundato reflexo, medio altiore, carina frontali haud libera, apice declivi et fere ad clypei apicem extensa. Thorax postice minus ampliatus; lateribus ante angulum distinctum posticum sinuatis, discrete punctatis, punctis majoribus et minoribus intermixtis. Elytris inæqualibus, subtilissime distanter sublineatim punctulatis. Pygidium subtilissime strigosum, apice fere læve. Processus sternalis parte mesosternali lata et brevissima, apice obtuse truncata.

Long. 23–30 millim. ♀.

Hab. Costa Rica (*Van Patten*), Rio Sucio (*Rogers*).

Five examples, apparently all females.

13. **Cotinis antonii.**

Cotinis Antonii, Dugès, La Naturaleza, iv. p. 170 (1879)[1].
Cotinis senex, O. Janson, Cist. Entom. ii. p. 575 (1880)[2].
Latemnis Antonii, Thomson, Le Naturaliste, i. p. 268.

Hab. Mexico[2], Guanajuato[1] (*Dugès, in coll. Sallé*), Tupataro in Guanajuato (*Höge*).

Wholly violet-black, the pubescence beneath black. The frontal carina is short and elevated, and terminates abruptly; the reflexed apex of the clypeus is often very distinctly higher in the middle and can never be called truncate. The sternal process is flat, but somewhat acutely rounded at the apex as in *C. producta.*

14. **Cotinis alboscripta.**

Gymnetis alboscripta, O. Janson, Cist. Entom. ii. p. 301[1].

Hab. Mexico, Almolonga (*Höge*), Amula in Guerrero (*H. H. Smith*), Oaxaca[1].

In this, the most aberrant species of the genus, the frontal carina though distinct blends gradually in front with a slight convexity in the middle of the clypeus, which latter has no trace of dentiform projection in the middle of the front edge; the sides of the forehead and truncated clypeus are equally and rather strongly elevated; the sternal process has the flat obtusely rounded form prevalent in *Cotinis.*

II. *Coxæ posticæ angulis posticis obtusis* (gen. Balsameda, *Thoms.*).

15. **Cotinis cincta.**

Gymnetis cincta, Gory & Perch. Monogr. Cétoin. p. 339, t. 67. fig. 6[1].
Cotinis cincta, Burm. Handb. der Ent. iii. p. 262[2].

Hab. Mexico[2].—Interior of Brazil[1] (locality erroneous, according to Burmeister).

Our collections contain nothing resembling this species.

Obs. Gory and Percheron give Mexico as the locality of another species, *C. terminata,* which Burmeister says is also erroneous, the species being from Brazil.

16. **Cotinis pulverulenta.** (Tab. XXII. fig. 10, ♂.)

Cotinis pulverulenta, Burm. Handb. der Ent. iii. p. 262 [1].
Cotinis gracilis, Sharp, Journ. Linn. Soc., Zool. xiii. p. 137 [2].

Hab. Mexico [1], Mirador (*Sallé*), Almolonga (*Höge*), Valladolid in Yucatan (*Gaumer*); British Honduras, Cayo (*Blancaneaux*); Honduras [2].

Burmeister mistook a (probably slender) female example for the male, and described both sexes as having sharply tridentate anterior tibiæ and the scattered scaly clothing as changing into scaly hairs on the under surface and legs. But the true males, in fact, have remarkably slender fore tibiæ, with no conspicuous tooth except the long curved terminal one; the second tooth is only slightly indicated, and in some examples entirely wanting, and the uppermost tooth is a very short sharp spine. The males have scattered oval scales over the entire body and legs; in the females the scales change on the pygidium, under surface, and legs into more or less slender hairs. In length the species varies from 17 to 21 millim., and in width from $7\frac{1}{2}$ to 12 millim. *C. gracilis*, Sharp, is founded on a slender male example.

We figure an individual from Mirador.

17. **Cotinis adspersa.** (Tab. XXI. fig. 14.)

Cotinis adspersa, Sharp, Journ. Linn. Soc., Zool. xiii. p. 136 [1].

Hab. Nicaragua, Chontales (*Belt* [1]).

A very distinct species. The frontal horn is much raised and laterally compressed, with a rather long free end pointed and curving downwards; in *C. pulverulenta* it forms a scarcely perceptible longitudinal swelling, free at the end through the deep pit-like depression of surface of the clypeus.

18. **Cotinis** —— ?

Hab. Mexico, Santa Clara in Chihuahua (*Höge*).

One example, crushed and distorted, of an evidently new species allied to *C. antonii.*

GYMNETIS.

Gymnetis, MacLeay, Horæ Ent. i. p. 153 (1819); Burmeister, Handb. der Ent. iii. p. 264; Lacordaire, Gen. Col. iii. p. 499.

A genus characteristic of Tropical America and comprising about 100 described species.

1. **Gymnetis cinerea.**

Gymnetis cinerea, Gory & Perch. Monogr. Cétoin. p. 371, t. 75. fig. 4; Burmeister, Handb. der Ent. iii. p. 268 [1].
Var. *Gymnetis punctata,* Blanch. Cat. Coll. Ent. i. p. 36 [2].

Hab. Mexico [1 2], Monterey in Nuevo Leon, Villa Lerdo in Durango, Aguas Calientes

city, Lagos in Aguas Calientes, Tonila in Colima, Colima city, Guadalajara, Matamoros Izucar and Atlixco in Puebla, Jalapa (*Höge*), Alamos (*Buchan-Hepburn*), Guerrero (*Baron*), Presidio (*Forrer*), Cordova, Puebla, Vera Cruz, Juquila, Oaxaca, Etla, Guanajuato (*Sallé*); Guatemala (*Sallé*), San Isidro, San Gerónimo (*Champion*).

A very large number of examples. The chief colour-varieties are:—(1) ochreous-tawny, (2) rich fulvous-brown, (3) dark purplish-brown, and (4) ashy-black, none of which seem to be local except no. 3, all the examples of which come from Colima city, some of them impunctate and others more or less strongly punctured. But the punctuation, which is the sole character of *C. punctata* of Blanchard, is present in certain specimens of all the colour-varieties, and, though apparently more frequent in those from the central and northern plateaux, is evidently of very little importance.

2. **Gymnetis uniformis.**

Gymnetis uniformis, Blanch. Cat. Coll. Ent. i. p. 36[1].

Hab. Mexico (*Ghiesbreght*[1]); Guatemala, near the city alt. 5000 feet (*Salvin, coll. Bates*).

A small example (♀, 20 millim.), evidently referable to this species, distinguished by its dark coppery under surface, legs, and pygidium, was brought from Guatemala by Mr. Salvin. The upperside is dark, nearly black, and velvety; the sternal process is formed as in *G. cinerea.*

3. **Gymnetis liturata.**

Cetonia liturata, Olivier, Ent. i. 6, p. 86, t. 12. fig. 121.

Gymnetis liturata, Gory & Perch. Monogr. Cétoin. p. 369, t. 75. fig. 1[1]; Burm. Handb. der Ent. iii. p. 272[2].

Hab. Mexico, Cordova (*Sallé*), Jalapa (*Höge*); British Honduras (*Blancaneaux*); Guatemala (*Sallé*), Cerro Zunil, Zapote, San Juan in Vera Paz (*Champion*), Coban (*Conradt*); Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Van Patten*), Rio Sucio, Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 2000 to 3000 feet, David, Caldera (*Champion*).—South America, Venezuela to S. Brazil.

4. **Gymnetis ocellata.**

Gymnetis ocellata, Gory & Perch. Monogr. Cétoin. p. 368, t. 74. fig. 5[1]; Burm. Handb. der Ent. iii. p. 274[2].

Hab. Mexico, Frontera in Tabasco (*H. H. Smith*); Nicaragua, Chontales (*Belt*).—South America[1 2].

5. **Gymnetis argenteola.** (Tab. XXII. fig. 7.)

Sat anguste oblonga, subviridescenti-flava, opaca, capite antice, thoracis margine incrassato, epimeris, scutello et corpore subtus pedibusque splendide cobaltino-argenteis; capite sparsim (plerumque arcuatim) punctato,

plano, clypeo quadrato, margine, præcipue antico, acute reflexo, hoc medio sinuato; thorace et elytris sparsim et irregulariter arcuatim punctulatis, punctulis minoribus rotundis intermixtis, illo dorso et basi fere impunctato, sutura parum elevato apice vix producto; pygidio (♂) flavo-opaco, sat magno inæqualiter convexo, vermiculato-strigoso, breviter setoso; corpore subtus et pedibus grossius sparsim arcuato-punctatis. Processus sternalis brevis, conicus, haud deorsum inclinatus; tibiæ anticæ (♂) breviter et acute tridentatis.
Long. 17 millim. ♂.

Hab. Mexico, Pinos Altos in Chihuahua (*Buchan-Hepburn*).

One example only of this beautiful little species has been received.

6. **Gymnetis margaritis.** (Tab. XXII. fig. 8, ♂.)

Supra pallide fusco-grisea vel fulvo-grisea, saturatius fusco-punctata (punctis minutis quoad formam multo diversis), elytris plaga magna juxtascutellari, lateribus et costis versus apicem pallide et sordide fuscis, minus dense punctatis, thorace linea tenui dorsali pallidiore; capite antice, thoracis margine incrassato, epimeris, scutello, corporeque subtus cum pedibus aurescenti-margaritaceis, nigro-punctatis (punctis arcuatis); ventre metasternoque medio lævibus. Capite nigro, punctato, clypeo quadrato, margine antico elevato et medio sinuato, fere obtuse bidentato; thoracis margine laterali ante basin sinuato; epimeris nigro-punctatis; pygidio transversim subvermiculatim nigro-strigoso. Processus sternalis brevis, conicus, haud deorsum inclinatus.

♂. Venter medio longitudinaliter depressus, segmentisque 2°–5ᵐ antice macula nigra; tibiæ anticæ angustæ, brevissime tridentatæ. ♀. Venter medio late niger, politus.
Long. 13–21 millim. ♂ ♀.

Hab. Mexico, Guerrero (*Baron*), Acapulco, Oaxaca (*Höge*), Etla, Tehuantepec (*Sallé*); Guatemala (*Sallé*).

The single examples from Etla and Tehuantepec have a short and narrow dark brown vitta from the middle of the base of each elytron. The unique Guatemalan specimen has a lazuline-bluish tinge on the upper surface and on the tibiæ.

An example from Tehuantepec is shown on our Plate.

7. **Gymnetis apiata.**

Gymnetis apiata, Burm. Handb. der Ent. iii. p. 278[1].

Hab. Mexico[1].

8. **Gymnetis difficilis.** (Tab. XXI. fig. 13.)

Gymnetis difficilis, Burm. Handb. der Ent. iii. p. 283[1].

Hab. Mexico[1], Cordova (*Sallé*), Misantla, Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, Chimaltenango (*Conradt*); Nicaragua, Chontales (*Belt*).

Burmeister says the males are lighter in colour and the females darker with the apex of the elytra only pale; but this distinction is not constant, as most of the males I have seen have the same characteristic fulvous apex (clouded with pale brown) as the females; the darkest or blackish individuals are, however, females. The mesosternal epimera are not furnished with a shining apical tubercle, and the mesosternal process is simple, *i. e.* without tubercle above, and of little vertical thickness; characters which distinguish the species from several others of similar colour and markings.

9. **Gymnetis chontalensis.** (Tab. XXIII. fig. 11.)

Gymnetis chontalensis, O. Janson, Cist. Entom. i. p. 374, t. 9. fig. 4[1].

Hab. Nicaragua, Chontales (*Janson*[1], *Belt*).

In this species the sternal process is of remarkable vertical width, and rather short and abruptly bent downwards.

10. **Gymnetis coturnix.** (Tab. XXIII. fig. 12, var.)

Gymnetis coturnix, Burm. Handb. der Ent. iii. p. 289[1].

Hab. Panama, Chiriqui (*Ribbe, coll. Bates*).—South America, Colombia[1].

Var. *G. nigrina.* Griseo-nigra, confluenter nigro-maculata, thorace strigis nonnullis guttisque elytrorum marginalibus versus apicem carneis.

Hab. Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui (*Champion*).

An example obtained from the late Edwin Brown's collection, and ticketed "Brazil," agrees with Burmeister's description of this species, and I suspect the locality attached is erroneous, the real habitat being most likely Colombia. A Chiriqui specimen from Ribbe agrees with it, except that the black spots of the elytra unite in larger patches. The ground-colour of this (the typical form) is above dark greyish or tawny-brown, with two or three distinct orange-coloured spots on the margin of the elytra. The species is extremely close to *G. chontalensis.* Besides the very different colour and the fewer and larger black spots of the elytra, I find no differences except that in *G. coturnix* the thorax has more acute and produced hind angles, and the black tubercle of the epimera is surrounded by a pink ring. The sternal process is a little less abruptly bent downwards, but the degree of this may be a variable character; it has the same great vertical width as in *G. chontalensis.* The male is of a uniform dark grey colour beneath as in *G. chontalensis.*

11. **Gymnetis balzarica.**

Gymnetis balzarica, O. Janson, Cist. Entom. ii. p. 580[1].

Hab. Costa Rica (*Van Patten*).—Ecuador, Balzar Mts.[1]

One example of this well-marked species was obtained from Van Patten's collection. *G. balzarica* was previously known only from the Balzar Mountains on the Pacific side of the main Andes in Ecuador.

12. **Gymnetis chevrolati.** (Tab. XXI. fig. 16, var. *ramulosa.*)

Gymnetis Chevrolat, Gory & Perch. Monogr. Cétoin. p. 346, t. 69. fig. 3.
Gymnetis ramulosa, Bates, Trans. Ent. Soc. Lond. 1869, p. 389[1].

Hab. Nicaragua, Chontales (*Belt*[1]); Panama, Chiriqui (*Trötsch*), Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

The examination of a large series has shown that *G. ramulosa* is only a slight and inconstant variety of *G. chevrolati*; but I have seen no specimen agreeing in the yellow lines of the elytra with Gory and Percheron's figure except one from Mr. Edwin Brown's collection labelled "Panama." In all the others the yellow fascia very nearly reaches the suture and in some both the fascia and borders are of considerable width, a small dark spot remaining at the junction of the fascia and border on each side. The colour of the upperside varies from dark olivaceous-brown to rich purplish-black. In the original description [1] of *G. ramulosa* the symbols of the sexes were accidentally reversed; it is the male that has the under surface dark (blackish) grey, and the female the glossy-black abdomen and middle of the sternum.

13. **Gymnetis kerremansi.** (Tab. XXI. figg. 7, 8.)

Gymnetis kerremansi, Van de Poll, Notes from the Leyden Mus. viii. p. 231 [1].

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba (*Champion*), Isthmus of Panama [1].

Our five examples (three males, two females) agree with V. de Poll's description, if we may understand his terms "cervina" and "fallow" to mean bluish-grey, for this is the colour of the underside, the mesosternal epimera, and the vague spots and borders of the numerous black spots and streaks which on a ground of ochreous make up the beautiful and highly diversified colour-pattern of the upperside. The males have more bluish-grey above, and the yellow spots of the female are more orange-coloured.

14. **Gymnetis callispila.** (Tab. XXII. fig. 15, ♂.)

Brevius quadrata, sat convexa, *G. radiicolli* similis; supra læte ochreo-flava (interdum subaurantiaca), nigro-maculata et plagiata nec maculis in lineas prolongatis sicut in *G. radiicolli*, fronte macula mediana; thorace plaga magna angulata basali (usque ad lobi basin extensa) strigis duabus flavis includente et antice vitta emittente, lateribus utrinque bi- et antice quadri-maculato; epimeris antice ochreis, postice nigris; elytris maculis plerumque in plagas majores sed irregulares congestis, margine angusto laterali latioreque apicali flavo immaculato. Subtus ♂ ochrea, nigro-punctata, mesosterni medio ventrisque fasciis mediaṅis quatuor nigris, hirsutie nigra; ♀ ventre toto nigro polito. Processus sternalis oblique dependens, apice inferiore paullo curvato.

Long. 21–24 millim. ♂ ♀.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

15. **Gymnetis radiicollis.** (Tab. XXII. fig. 14.)

Gymnetis radiicollis, Burm. Handb. der Ent. v. p. 552 [1].

Hab. Mexico [1], Orizaba (*Sallé*).

One (female) example in the Sallé collection. Besides the differences of colour-pattern on the upperside, this species is distinguished from *G. callispila* by the greyish-black epimera and under surface, and the more prolonged and narrower sternal process.

16. **Gymnetis pœcila.**

Gymnetis pœcila, Schaum, Trans. Ent. Soc. Lond. v. p. 66, t. 8. fig. 2 (1848) [1].

Hab. Mexico [1], Puebla (*Sallé*), Guerrero (*Baron*).

17. **Gymnetis sallæi.**

Gymnetis Sallei, Schaum, Ann. Soc. Ent. Fr. 1849, p. 255 [1].
Gymnetis marmorea, Burm. Handb. der Ent. iii. p. 285 (nec Olivier).
Gymnetis tristis, Burm. loc. cit. v. p. 551 (nec Olivier).

Hab. North America, Louisiana [1].—Mexico [1], Cordova, Orizaba (*Sallé*), Jalapa, Playa Vicente (*Höge*); Guatemala, Escuintla (*Conradt*).

The large female example from Escuintla has the thorax and mesothoracic epimera entirely black.

18. **Gymnetis stellata.** (Tab. XXII. fig. 16.)

Cetonia stellata, Latreille, in Humb. & Bonpl. Obs. Zool. ii. p. 43, t. 33. fig. 2.
Gymnetis stellata, Burm. Handb. der Ent. iii. p. 298; Gory & Perch. Monogr. Cétoin. p. 350, t. 70. fig. 2 [1].
Macronota radiata, Wiedemann, Analecta Entom. p. 8 [2].

Hab. Mexico, Orizaba (*Sallé*), Guadalajara (*Höge*); Panama (*coll. Bates*).—South America [1 2], Santa Marta, Colombia.

The example figured is from Orizaba.

GUATEMALICA.

Guatemalica, Van de Poll, Notes from the Leyd. Mus. viii. p. 138 (1886).
Allorhina, Chevrolat, Ann. Soc. Ent. Belg. xiv. p. 6.

Distinguished from *Gymnetis*, with which it agrees in the velvety-opaque upper surface of the body, by the clypeus being narrowed to the front and triangularly (not very deeply) emarginated at the apex, the spinose-dentate apices of the four hinder tibiæ, and (in the typical species) by the acuminate sternal process curved upwards at the apex. The abdomen in the males is depressed and longitudinally subsulcate in the middle.

The following two species only, both peculiar to Central America, are known. The second differs from *G. hueti* in the sternal process being shorter, acutely conical, and not recurved at the apex.

1. **Guatemalica hueti.**

Allorhina hueti, Chevrolat, Ann. Soc. Ent. Belg. xiv. p. 6, t. 1. fig. 1 [1].

Hab. Guatemala [1], Cerro Zunil 4000 feet (*Champion*); Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

The underside is similar in both sexes, shining black, glabrous, with small chalky-

white or yellow spots on the lateral segments of the metasternum and the sides of the ventral segments.

2. Guatemalica marginicollis.

Gymnetis marginicollis, Burm. Handb. der Ent. iii. p. 266 [1].

Hab. Mexico [1] (*Sallé*), Almolonga in Vera Cruz (*Höge*).

Named *G. marginicollis*, Burm., in the Sallé collection, and agreeing with Burmeister's description, with the very important exception of the emarginated clypeus, Burmeister saying expressly "kopfschild vorn aufgebogen, nicht ausgebuchtet." It is only on the venturesome supposition that Burmeister's specimen had the head of another species fixed to it that I adopt M. Sallé's determination; one of Herr Höge's two examples has also a false head glued to it, apparently the head of a *Euphoria*.

The chalky-white or yellow markings of the elytra are sometimes separated mostly into spots, viz. (in a female example) one in the middle of the base on each elytron, two on the disc nearly side by side behind the middle, a short marginal streak near the shoulder, another on each side of the scutellum, and a flexuous fascia near the apex extending from the suture to the outer angle. In two male examples the spots (all in the same position) are united in streaks, the scutellar stripe with the basal spot, and the two spots on the disc in an angular band reaching the lateral margin, the subapical fascia remaining the same. In the male the mesothoracic epimera are entirely opaque white, and the naked part of the underside is faintly punctured. Burmeister describes his insect as a male, shining (*i. e.* glabrous) and rugose beneath, with the hind margins of the ventral segments at the sides grey: this agrees precisely with our female specimen.

AMITHAO.

Amithao, Thomson, Typi Cetonid. p. 11 (1878).
Cotinis (pars), Burmeister, Handb. der Ent. iii. p. 263.
Melasictes, Thomson, Le Naturaliste, i. p. 268 (1880).

This genus seems to be sufficiently well-defined by its deep and angularly emarginated clypeus, the three more or less spiniform apical teeth of the four hinder tibiæ, and the horizontal sternal process, generally conical but sometimes more elongate and flattened. The type-species of Thomson (*A. lafertei*) has, at least in the male, what he terms a tubercle on the head, "♂ caput tuberculatum;" this no doubt refers to a prominence which marks the abrupt end of what in *Cotinis* would be a frontal carina or horn, but which in *Amithao* is scarcely elevated. This structure is more pronounced in another species, *A. cavifrons*; but in others it disappears, leaving as a trace of its termination a small pit near the base of the raised edge of the clypeus. There are gradations in this structure from species to species, which are not accompanied by any

other character of importance. I therefore do not venture to adopt Thomson's genus *Melasictes*, the chief justification of which lies in this character, although the description does not point it out.

The genus seems to be peculiar to Central America and the northern parts of South America.

1. **Amithao albopictus.** (Tab. XXII. fig. 17.)

Amithao albopictus, Van de Poll, Notes from the Leyd. Mus. viii. p. 233 [1].

Hab. Panama [1], Chiriqui (*Trötsch*).

2. **Amithao cavifrons.** (Tab. XXI. fig. 9.)

Cotinis cavifrons, Burm. Handb. der Ent. iii. p. 263 [1].

Hab. Mexico [1], Toxpam, Cordova (*Sallé*), Misantla (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*); Nicaragua, Chontales (*Belt*, *Janson*).

A good series of examples. In both sexes the sides of the crown and forehead and the apex of the bidentate clypeus are more elevated than in *A. albopictus*, and the pit in front of the tubercle is broad and deep.

3. **Amithao hæmatopus.** (Tab. XXI. fig. 11.)

Stethodesma hæmatopus, Schaum, Trans. Ent. Soc. Lond. v. p. 68 [1].
Desicasta hæmatopus, O. Janson, Cist. Entom. iii. p. 147 [2].

Hab. Mexico [1] (*Sallé*); Nicaragua, Chontales (*Belt*, *Janson* [2]).

Two examples, males, perfectly similar. The centre of the forehead is very feebly convex, and slopes in front into a small but deepish pit near the triangular emargination of the clypeus; the latter is strongly bidentate and scarcely reflexed.

4. **Amithao thomsoni.**

Desicasta Thomsoni, O. Janson, Cist. Entom. ii. p. 302 [1].

Hab. Panama [1].

Described as allied to *A. hæmatopus*. Not contained in our collections.

5. **Amithao metallicus.**

Desicasta metallica, O. Janson, Cist. Entom. iii. p. 146 [1].

Hab. Costa Rica [1] (*Van Patten*); Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*), Veragua [1].

6. **Amithao pyrrhonotus.** (Tab. XXII. fig. 18.)

Gymnetis pyrrhonota, Burm. Handb. der Ent. iii. p. 267 [1].

Hab. Mexico [1], Mirador (*Sallé*), Cordova (*Höge*).

Closely allied to *A. hæmatopus* and similar in form and size (26–28 millim.), but the

head and thorax are very much smoother, and the whole upper surface tawny-red with a golden tinge, and highly polished; the sternal process is elongated, flattened, and slightly curved upwards at the tip. The clypeus has a much shallower emargination, and the convexity of the middle of the forehead is slight and slopes in front into a moderately deep pit. The front and lateral margins of the clypeus differ also in being sharply raised.

7. **Amithao erythropus.** (Tab. XXII. fig. 19.)

Cotinis erythropus, Burm. Handb. der Ent. iii. p. 263[1].

Var. Supra immaculata.

Cotinis moreletii, Blanch. Cat. Coll. Ent. i. p. 33[2]?

Hab. MEXICO[1 2], Cordova, Toxpam, Tanetza (*Sallé*), Jalapa (*Höge*); GUATEMALA, Panzos in Vera Paz (*Conradt*).

The forehead and clypeus are shaped nearly the same as in *A. pyrrhonotus*, but the sternal process differs in being short and conical. The legs in all our examples (except an immature one) are black. An example in the Sallé collection is entirely without white tomentose markings, and agrees with Blanchard's description of *C. moreletii*, except in the black legs.

A specimen from Panzos is figured.

DESICASTA.

Desicasta, Thomson, Typi Cetonid. p. 14 (1878).
Moscheuma, Thomson, Le Naturaliste, i. p. 268 (1880).
Stethodesma (pars).

After defining the genus somewhat imperfectly in 1878, Thomson redescribed it more intelligibly in 1880, re-naming it and giving the same species as belonging to it. The only character which distinguishes it from *Amithao* is the obliquely deflected and thick sternal process, described by Thomson as "mesosterni appendix robustissima sat elongata, paullo subtus directa, apice rotundato." *D. lobata* (Oliv.), a well-known species from Guiana, is included both in *Desicasta* and *Moscheuma* by the author, also *D. sculptilis*, Thoms. (the type of *Desicasta*), the description of which offers nothing to distinguish it from *D. lobata* and *D. reichei*, Thoms. Under *Desicasta* is further enumerated *D. hæmatopus* of Schaum, which does not agree with the others in the form of the sternal process.

The genus appears to be confined to Colombia (with Panama) and Guiana. *D. lobata* (Oliv.) and *D. sebosa* (Van de Poll) are also found on the Lower Amazons.

1. **Desicasta lævicostata.**

Moscheuma lævicostatum, Van de Poll, Notes from the Leyd. Mus. viii. p. 235[1].

Hab. PANAMA[1].

I have not seen this species.

Subfam. *CETONIINÆ.*

STEPHANUCHA.

Stephanucha, Burmeister, Handb. der Ent. iii. p. 394 (1842).
Euphoria (pars), Horn, Proc. Am. Phil. Soc. 1879, p. 398.

A North-American genus, of which three species have been described. The following differs from the generic type in the clypeus having only two spiniform teeth at the apex instead of four; but in the rounded thorax (entire near the scutellum), the short narrow mesosternal process, and the strongly elevated exterior ridges of the four hinder tibiæ, in the middle pair bicuspid, the species accords with *Stephanucha.* Although the clypeus has only two teeth at the tip, there is a trace of another on each side in the distinct angle formed on the abrupt narrowing of the clypeus towards the apex.

1. Stephanucha bispinis.

Euphoria verticali (Horn) affinis; differt corpore toto fulvo-pubescenti, supra breviter et erecte, subtus dense et longe, villosa; brevis, ovata, nigra vel [immatura (?)] rufescens; clypeo curvilineariter (juxta apicem abrupte) angustato apiceque dentibus duobus acutis erectis; capite supra concavo, dense rugoso-punctato, vertice tuberculo valido; thorace late ovato, lateribus cum angulis posticis rotundatis, dense striguloso-punctato et erecte pubescenti, linea dorsali lævi, postice prope scutellum obtuse truncato; elytris costis duabus lævibus interstitiis sublineatim et sat dense umbilicato-punctatis, quam thorax paullo sparsius pubescentibus; pygidio (♂ lato convexo, ♀ subplano) paullo dense transversim subrugulose punctato, pubescenti. Pedes cum tarsis breves; tibiæ anticæ, ♂ ♀, dentibus gracilibus acutis exstantibus tribus, 4 posticæ, præcipue in ♀, medio extus grosse dentatis vel bidentatis. Processus sternalis brevis, apice truncato.

Long. 14 millim. ♂ ♀.

Hab. Mexico, Ventanas in Durango 2000 feet, Ciudad in Durango 8100 feet (*Forrer*).

Evidently closely allied to *Euphoria verticalis*, Horn, but differing, besides the dense pubescence, in the broader clypeus, each side of which, near the apical teeth, is subangulated owing to the suddenly increased narrowing.

EUPHORIA.

Euphoria, Burmeister, Handb. der Ent. iii. p. 370 (1842); Horn, Proc. Am. Phil. Soc. 1879, p. 397.
Erirhipis, Burmeister, loc. cit. p. 385.
Euryomia (pars), Lacordaire, Gen. Col. iii. p. 527.

A genus difficult to define, though the same may be said of many other genera of Cetoniidæ which have hitherto been generally admitted. It comprises nearly all the "Cétonides vraies" of Lacordaire found in America, all of medium or small size, and differing greatly in colours and style of markings and in the shape of the clypeus and other structural features on which systematists rely for generic characters in this difficult family. The clypeus especially presents in different species the various forms characteristic of many distinct genera of the Old World, such as *Cetonia*, *Euryomia*, *Elaphinis*, and others; and this was chiefly, no doubt, the cause of Lacordaire's too

hasty conclusion that *Euphoria* was admitted only on considerations of geographical distribution, and that it should be merged together with numerous Old-World genera under *Euryomia*. Dr. Horn, rightly, considered that the author of the 'Genera' in this proceeded too far. On the examination of a large series of species and individuals it is found that the clypeus in this group is exceedingly variable: first, to a minor but still considerable extent among individuals of the same species, and, next, in various degrees from one closely allied species to another; the variability of this important member may in fact be adduced as one of the characters of the genus, the variations being modifications of a certain typical form, *i. e.* narrowed anteriorly with the apical margin more or less reflexed and sinuated. The most constant structural feature is that of the mesosternal process, which is always horizontal and more or less dilated and rounded at its apex.

About 45 species have been described, the great majority from the United States and Mexico.

I.

1. Euphoria lesueuri.

Cetonia Lesueur, Gory & Perch. Monogr. Cétoin. p. 212, t. 39. fig. 1 (♀)[1].
Euphoria Lesueurii, Burm. Handb. der Ent. iii. p. 372 (♀)[2].
Cetonia Latreille, Gory & Perch. loc. cit. p. 213, t. 39. fig. 3 (♂)[3].
Euphoria Latreillii, Burm. Handb. der Ent. iii. p. 373[4].

Hab. Mexico[1 2 3 4], Orizaba, Juquila, Capulalpam, Tepansacualco (*Sallé*), Jalapa, Almolonga (*Höge*); Guatemala, Sinanja and Purula in Vera Paz (*Champion*), Coban in Vera Paz (*Conradt*).

A large series of examples. M. Sallé took *E. latreillei* and *E. lesueuri* in copulâ, and convinced himself that the former (velvety-opaque above and generally smaller) is the male of *E. lesueuri*, distinguished by its glabrous and shining thorax, more spotted elytra, and generally larger size. The external characters of the male, one or other of which is commonly present in the Cetoniidæ, fail entirely in this species, the pygidium only showing a slightly greater convexity in some examples; but on dissection, examples of *E. lesueuri* are found to be males. The species varies in colour from green to dark purple and olivaceous-black, and the size from 16 to 22 millim.

2. Euphoria westermanni.

Cetonia Westermann, Gory & Perch. Monogr. Cétoin. p. 212, t. 39. fig. 2 (♂)[1].
Euphoria Westermanni, Burm. Handb. der Ent. iii. p. 374 (♂)[2].

Hab. Mexico[1 2], South Mexico (*Sturm, in coll. Sallé*), Juquila (*Sallé*).

Three examples, males, all agreeing in the long and rather dense pubescence on the forehead, sides of the thorax, and under surface of the body, two of them in the tubercle on the crown and the long antennal club-characters which Burmeister adduces as distin-

guishing this species. But they also agree in the gibbous convexity of the pygidium, which Burmeister does not mention, but which Gory and Percheron specify as a characteristic of their *E. latreillei*. The three examples are all green. The differences in colour and in the frontal carina, as well as in other numerous points enlarged on by Burmeister, are not of the slightest value, as they exist in all gradations in *E. lesueuri*. Many male examples of the latter species show traces of pubescence on the sides of the thorax. I doubt very much if the *E. westermanni* of Burmeister is the same as Gory and Percheron's species of the same name, as it does not agree either with their description or their figure, especially with regard to the spinose sutural apices of the elytra; it is possible that this character may be variable, but none of our specimens show any distinct trace of it.

3. **Euphoria steinheili.**

Euphoria Steinheili, O. Janson, Cist. Entom. ii. p. 303 [1].

Hab. Panama [1], Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Two male examples, with the abdomen longitudinally depressed and subsulcate and the pygidium nearly plane.

4. **Euphoria candezei.** (Tab. XXIII. fig. 3.)

Euphoria (*Erirhipis*) *Candezei*, O. Janson, Cist. Entom. i. p. 375, t. 9. fig. 5 (1875) [1].
Euphoria belti, Sharp, Journ. Linn. Soc., Zool. xiii. p. 137 (1877) [2].

Hab. Guatemala (*Sallé*), San Gerónimo (*Champion*), Coban in Vera Paz (*Conradt*); Nicaragua, Chontales (*Belt* [2], *Janson* [1]); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*).

II.

5. **Euphoria leucographa.**

Cetonia leucographa, Gory & Perch. Monogr. Cétoin. p. 208, t. 38. fig. 1 [1].
Cetonia Reich, Gory & Perch. loc. cit. p. 210, t. 38. fig. 3 [2] ?
Euphoria leucographa, Burm. Handb. der Ent. iii. p. 375 [3].

Hab. Mexico [1 2 3], Vera Cruz, Tuxtla, Etla, Capulalpam, Oaxaca (*Sallé*), Jalapa, Almolonga, Misantla, Guadalajara, Chilpancingo in Guerrero (*Höge*), Acapulco (*J. J. Walker*).

Var. *Cetonia rufina*, Gory & Perch. Monogr. Cétoin. p. 206, t. 37. fig. 5 [1].
Rufescens cupreo-tincta, thorace plerumque plagis duabus nigro-æneis.

Hab. Mexico [1], Northern Sonora (*Morrison*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Durango city, Ventanas in Durango, Zapotlan in Colima, Iguala and Chilpancingo in Guerrero, Tacambaro in Michoacan, Matamoros Izucar in Puebla, Cordova, Almolonga, Mexico city (*Höge*), Guanajuato, Puebla (*Sallé*).

A great number of examples. The species varies much in colour—dark bluish,

brassy-green, coppery, and tawny-red with coppery-red gloss; also in the form of the clypeus, which assumes such a diversity of outline in individuals otherwise so nearly alike that no other proof is necessary of the unreliability of this part for classificatory purposes in the group of Cetoniidæ to which this genus belongs—it is most frequently rather elongate, curvilinearly or rectilinearly narrowed, with reflexed sub-bidentate apex; from this it rapidly varies to trapezoidal and to semiovate with or without strongly raised margins and entire apical border, and to short and transverse with high and entire margins. The variety *rufina* will be seen, from the localities enumerated above, to have a more northerly or elevated range than the type-form, and it is often much more densely pubescent above, but insensible gradations connect the two forms.

6. Euphoria limatula.

Euphoria limatula, O. Janson, Cist. Entom. ii. p. 585 [1].

Hab. Mexico, S.W. Yucatan (*Dr. Horn*); Guatemala [1] (*Sallé*), Aceytuno 5100 feet (*Salvin*), San Gerónimo (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*).

A good series of examples. The prevailing colour is, as the author describes it, dark greenish-blue, but it varies, and a rufous variety (like that of *E. leucographa*) is not uncommon. The species scarcely differs from *E. leucographa,* except in the sparser punctuation and impunctate dorsal vitta of the thorax, and in the generally shorter clypeus, which latter varies in the sinuation of the apex, but less so than in *E. leucographa.* The transverse chalky spots on the sides of the ventral segments exist only in a few examples of the male, and the metasternum has sometimes on each side, visible under the long grey pubescence, a few large scale-like whitish spots.

7. Euphoria yucateca.

E. limatulæ proxime affinis, sed differt brevius oblongo-ovata, thorace et elytris adhuc sparsius punctatis, metasterno ventreque in ♂ lateribus late cretaceo-albis illo vix hirsuto. Cyanescenti-viridi-ænea, raro obscure cuprascenti-ænea, elytris sicut in affinibus cretaceo-maculatis et thoracis lateribus latius albo-vittatis; clypeo sæpe æneo, obtuse quadrato vel semiovato marginibus parum reflexis, apice interdum sinuato, sæpe maculis duabus cretaceis; thorace sparsissime punctato, medio lævi; elytris sparse arcuatim (lateribus strigulatim) punctatis; pygidio maculis duabus grossis cretaceis; pectore multo brevius cinereo-hirsutis, metasterno lateribus in ♂ fere toto, in ♀ maculatim cretaceo, ventre utrinque in ♂ late, in ♀ maculis tantum parvis lateralibus, cretaceis.

Long. 12–15 millim. ♂ ♀.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

A large number of examples. According to the description and figure of Gory and Percheron this species must resemble *E. bivittata* of Guiana; but in no example is there a trace of the two cretaceous vittæ of the disc of the thorax which distinguish *E. bivittata.*

Obs.—There is an example of *E. lurida* (Fabr.) in the Sallé collection labelled

"Mexico;" but as this species seems to be restricted to Southern Brazil it is to be suspected that the locality in this case is an error.

III.

8. **Euphoria lineoligera.** (Tab. XXIII. fig. 4.)

Euphoria lineoligera, Blanch. Cat. Coll. Ent. i. p. 13 (1850)[1].
Euphoria xanthomelas, Thomson, Typi Cetonid. p. 26 (1878)[2].

Hab. Mexico[2] (*Ghiesbreght*[1]), Ventanas (*Forrer*), Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Villa Lerdo in Durango, Aguas Calientes city, Guadalajara, Cuernavaca (*Höge*), Guanajuato, Orizaba (*Sallé*).

In this species, like all others of Group III., the clypeus is plane with very narrow and scarcely reflexed margins.

9. **Euphoria biguttata.** (Tab. XXIII. fig. 2.)

Cetonia bi-guttata, Gory & Perch. Monogr. Cétoin. p. 274, t. 53. fig. 4[1].
Euphoria biguttata, Burm. Handb. der Ent. iii. p. 384[2].

Hab. Mexico[1 2], Cordova, Orizaba, Izucar, Vera Cruz (*Sallé*), Jalapa, Mexico city, Oaxaca, Tonila, Zapotlan in Colima (*Höge*), Cuernavaca (*H. H. Smith*, *Höge*); Guatemala (*Sallé*), El Jicaro, Escuintla, Capetillo (*Champion*), Chimaltenango (*Conradt*).

10. **Euphoria canescens.**

Cetonia canescens, Gory & Perch. Monogr. Cétoin. p. 277, t. 54. fig. 1[1].
Euphoria canescens, Burm. Handb. der Ent. iii. p. 383[2].

Hab. Mexico[1 2], Puebla, Orizaba, Guanajuato (*Sallé*), Jalapa, Matamoros Izucar in Puebla, Lagos in Aguas Calientes (*Höge*); Guatemala, Tocoy (*Champion*).

11. **Euphoria leucopyge.**

E. dimidiatæ similis, at differt elytris apice pygidioque dense albido-tomentosis, hoc apice nudo nigro; nigro-nitida, elytris dimidio basali sanguinea margineque juxta scutellum breviter anguste nigro-marginato; capite dense confluenter punctato; clypeo sat elongato, medio dilatato, apice lato, subtruncato, anguste reflexo, marginibus lateralibus haud reflexis; thorace dense confluenter punctato, disco postice lævore, lobo basali vix producto, late et parum emarginato; elytris mediocriter punctatis; subtus hirsutie fulva, ventre utrinque marginibus anticis solum hirsutis. Processus sternalis brevis apiceque dilatatus et obtusissime rotundatus.
Long. 14 millim.

Hab. Mexico, Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Alamos (*Buchan-Hepburn*), Ventanas in Durango (*Forrer*).

The clypeus does not essentially differ from that of *E. dimidiata*, in which species it is very variable in length and outline.

12. **Euphoria dimidiata.**

Cetonia dimidiata, Gory & Perch. Monogr. Cétoin. p. 275, t. 53. fig. 7[1].
Euphoria dimidiata, Burm. Handb. der Ent. iii. p. 380[2].

Hab. Mexico[1 2], Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Orizaba, Cordova, Vera Cruz, Guanajuato (*Sallé*), Jalapa, Atlixco, Tonila in Colima (*Höge*); Guatemala (*Sallé*), San Joaquin, San Gerónimo, Tocoy (*Champion*), Chimaltenango, Escuintla (*Conradt*).

In all the very numerous examples the apex of the elytra and the pygidium are clothed with silvery-grey setose hairs, with no trace of the compact tomentum of *E. leucopyge*.

13. **Euphoria pulchella.** (Tab. XXIII. fig. 6.)

Cetonia pulchella, Gory & Perch. Monogr. Cétoin. p. 279, t. 54. fig. 4[1].
Euphoria pulchella, Burm. Handb. der Ent. iii. p. 381[2].
Cetonia ferrugata, Gory & Perch. Monogr. Cétoin. p. 276, t. 53. fig. 8 (*C. pulchella,* var., Burm. loc. cit.)[3].
Cetonia Children, Gory & Perch. Monogr. Cétoin. p. 275, t. 53. fig. 6[4].
Euphoria Childrenii, Burm. Handb. der Ent. iii. p. 382[5].
Cetonia Thelasco, Gory & Perch. Monogr. Cétoin. p. 279, t. 54. fig. 5 (*E. Childrenii,* var., Burm. loc. cit.)[6].
Cetonia Montesuma, Gory & Perch. Monogr. Cétoin. p. 277, t. 54. fig. 2 (*E. childrenii,* var., Burm. loc. cit.)[7].

Hab. Mexico[1 2 3 4 5 6 7], Pinos Altos in Chihuahua (*Buchan-Hepburn*), Ventanas (*Forrer*), Cordova, Orizaba, Vera Cruz, Toxpam, Oaxaca (*Sallé*), Almolonga, Chilpancingo in Guerrero, Sayula in Jalisco (*Höge*), Misantla (*F. D. G.*), Teapa, Atoyac (*H. H. Smith*); Guatemala (*Sallé*), San Gerónimo, Chacoj in Vera Paz (*Champion*), Tactic, Coban (*Conradt*); Nicaragua, Chontales (*Belt*).

Most of the colour-varieties of this very variable species figured by Gory and Percheron were captured at Almolonga by Herr Höge, and others equally or more distinct appear in other Mexican localities. The examples from Guatemala are similarly variable in colour and markings, and they do not form a distinct local form.

14. **Euphoria basalis.**

Cetonia basalis, Gory & Perch. Monogr. Cétoin. p. 274, t. 53. fig. 5[1].
Euphoria basalis, Burm. Handb. der Ent. iii. p. 380[2].

Hab. Mexico[1 2], San Luis Potosi (*Dr. Palmer*), Chihuahua city, Sayula in Jalisco, Chilpancingo, Tacambaro in Michoacan, Esperanza, Jalapa (*Höge*), Puebla, Cordova, Parada, Guanajuato, Toxpam, Cuernavaca, Oaxaca (*Sallé*).

IV.

15. **Euphoria chontalensis.** (Tab. XXIII. fig. 10.)

E. morosæ (Jans.) proxime affinis, sed differt inter alia thorace scutelloque politis nigro-æneis. Oblongo-quadrata, nigro-ænea, elytris solum opacis maculis plurimis transversis undulatis fulvis; supra capite densius, elytris sparsius, fulvo-setosa; subtus hirsutie sat rigida fulva; capite densissime punctato, clypeo prope apicem angustato apiceque alte reflexo nec sinuato; thorace disco sparsius, lateribus densius arcuato-punctatis, basi medio lævi, lobo basali sat fortiter emarginato; elytris utrinque costis duabus validis impunctatis, interstitiis distanter lineatim punctatis, apice suturali haud producto; pygidio sat dense setoso, crebre striguloso, nigro-æneo, maculis utrinque fulvis (interdum deficientibus). Processus sternalis brevis et latus, antice rotundatus. Tibiæ anticæ ♂ acute tridentatæ, duobus apicalibus approximatis et exstantibus, 3° valde remoto. Antennæ ♂ clava elongata, cæteris articulis conjunctis vix brevior.
Long. 17 millim.

Hab. Nicaragua, Chontales (*Belt*).

Five examples, apparently all males.

16. **Euphoria precaria.**

Euphoria precaria, O. Janson, Cist. Entom. ii. p. 583 [1].

Hab. Panama, Chiriqui (*Trötsch*), Bugaba, Tolé (*Champion*). — South America, Colombia [1].

Closely allied to *E. iridescens*, Schaum. One of our examples agrees with Janson's description with regard to the elytra being of a dark olive-green ground-colour (like the rest of the body), with some small obscure yellowish spots on the elytra; but in others there is as much dark yellow spotty-colouring on the elytra as dark green, and the sides of the elytra especially are yellow with a series of large, quadrate, but irregular, dark green spots. The thorax is dark green, with a fine dorsal line and a small basal spot on each side yellow; but in one example the thorax has four dark-green vittæ as in *E. iridescens.*

17. **Euphoria iridescens.** (Tab. XXII. fig. 1.)

Euphoria iridescens, Schaum, Analecta Entomologica, p. 45 [1]; Burm. Handb. der Ent. iii. p. 388.

Hab. Mexico, Puebla, Izucar (*Sallé*), Guerrero (*Baron*); Guatemala [1] (*Sallé*), Mirandilla 1700 feet, Aceytuno (*Champion*).

V.

18. **Euphoria leprosa.**

Euphoria leprosa, Burm. Handb. der Ent. iii. p. 379 [1].

Hab. Mexico [1], San Andres Tuxtla (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*).

The form of the clypeus is intermediate between that of Section IV. and that of Section VII. There are two varieties of this species in our small series:—

1. Smaller and narrower, dull black, with three narrow chalky-white vittæ on the

thorax, and numerous small and narrow transverse white spots on the elytra. This appears to be the form described by Burmeister.

2. Rather larger and broader. Ochreous, with two broad black vittæ on the disc of the thorax, and the elytral costæ, and numerous marks in the interstices, black. The antennal club in the male is considerably shorter than joints 1–7.

VI.

19. **Euphoria mystica.** (Tab. XXIII. fig. 5.)

Euphoria mystica, Thomson, Typi Cetonid. p. 27[1].

Hab. Mexico, Orizaba, Cordova (*Sallé*), Jalapa (*Höge*); Guatemala, Coban in Vera Paz (*Conradt*).

Thomson's description is taken from an unusually small specimen (12½ millim.); the numerous series before me (which includes examples named by Sallé) range from 14 to 18 millim., the smallest being males, brassy-black, with the elytra thickly sprinkled with confluent transverse and undulated fulvous spots. The females much resemble *E. precaria,* and the species connects Section IV. with the present group, to which it belongs by the clypeus being in the male narrowly quadrate, with the apical margin strongly reflexed, and more or less deeply sinuated, sometimes almost bidentate, in the female shorter and less reflexed. The upper surface in fresh specimens, especially in the male, is rather densely erect pubescent, the thorax and scutellum shining, and the elytra opaque. The more or less thickly punctured and large scutellum is an excellent distinguishing character. The antennal club is elongated in both sexes, in the male about one fourth longer than joints 1–7 taken together. The thorax, as usual in this group, differs in form in the two sexes, but not in all examples—in the male being gradually narrowed (with a slight sinuation) from the base to the apex, in the female strongly rounded about the middle. The female varies much in colour—the head, thorax, and scutellum being more or less rufous, with a strong metallic gloss, and sometimes metallic green vittæ, and the elytra fulvous, with numerous small transverse confluent spots, or, in extreme cases, almost spotless.

20. **Euphoria ——?**

Hab. Guatemala, Purula (*Champion*).

A single female example, discoloured, apparently distinct from the preceding.

21. **Euphoria submaculosa.**

Cetonia submaculosa, Gory & Perch. Monogr. Cétoin. p. 211, t. 38. fig. 6[1].
Erirhipis submaculosa, Burm. Handb. der Ent. iii. p. 392[2].

Hab. Mexico[1 2], Orizaba (*Sallé*), Jalapa (*Höge*), Cordova (*Sallé, Höge*).

Velvety-opaque; generally green, but sometimes coppery; elytra often concolorous, but in most examples with a few or numerous transverse tawny-red spots; when thickly spotted the thorax is also obscure tawny-red, with the disc or two vague dorsal vittæ green. The clypeus is nearly square, *i. e.* parallel-sided, with the margins raised and the apex more or less sinuated.

22. **Euphoria avita.** (Tab. XXIII. figg. 8; 9, var.)

Euphoria avita, O. Janson, Cist. Entom. ii. p. 584[1].

Hab. Guatemala[1] (*Sallé*), Las Mercedes, Cerro Zunil, Calderas, Dueñas (*Champion*), Chimaltenango (*Conradt*).

Differs from *E. mystica* in its much smaller size and opaque thorax and scutellum, the latter being smooth, with the exception of a puncture or two near the base. In most respects it is much more nearly allied to *E. vestita*, from which it differs in the clypeus being narrower, much longer, and more reflexed-sub-bidentate at the apex. *E. avita* is of rather smaller and more slender form, and offers a somewhat different range of variation; some examples being dull dark green, a triangular spot on the basal lobe of the thorax and a few transverse undulating spots on the elytra only being fulvous, in which state it resembles a small *E. submaculosa*. The clypeus in both sexes is as described under *E. mystica*. In the great majority of examples the elytra are fulvous, with very numerous blackish spots, the thorax blackish with a dorsal line, and a discal spot on each side, and the base fulvous, and in many the lateral and anterior margins are also of the same colour. The antennal club in the male is rather longer than joints 1–7 taken together. The anterior tibiæ are tridentate in both sexes, the upper tooth sometimes very short in the male.

23. **Euphoria fulveola.** (Tab. XXIII. fig. 7.)

Convexiuscula, lætius fulva, pubescens, opaca, thoracis disco utrinque signatura flexuoso-trilobata (interdum interrupta), elytrisque maculis numerosis parvis et majoribus hic illic confluentibus, nigro-fuscis; clypeo (♂ ♀) quadrato, lateribus fere parallelis, marginibus reflexis, apicali lato medio depresso-sinuato; thorace (♂ ♀) trapezoidali, basi lato medioque arcuatim emarginato; scutello fulvo, impunctato; pedibus, ventre et antennis rufescentibus, nitidis. ♂. Antennarum clava articulis 1°–7^{m} conjunctis paullulum longior; tibiæ anticæ acute tridentatæ. ♀. Antennarum clava articulis 1°–7^{m} paullo brevior; tibiæ anticæ latæ et latius tridentatæ.

Long. 13–15 millim.

Hab. Mexico, Zacualtipan in Hidalgo, Oaxaca (*Höge*).

The rather clearer orange-tawny colour distinguishes this species from *E. vestita*, besides the striking difference in the size of the antennal club and armature of the anterior tibiæ in the male. The shorter, broader, and squarer clypeus distinguishes it from *E. avita*. The markings of the thorax are the same as in the clear-coloured examples of both the other allied species. There is scarcely any difference in colour or markings in the seven examples examined.

24. Euphoria nigriventris.

E. vestitæ affinis et similariter colorata, sed differt statura minore, magis quadrata, subdepressa, thorace medio basi vix emarginata, ♂ antennarum clava mediocri, sed articulis 1°–7ᵐ conspicue longioribus tibiisque anticis sat latis tridentatis. Subtus nigro-nitida pedibus concoloribus; clypeo antice minime vel haud dilatato, fere quadrato, margine apicali medio paullo sinuato; thorace obtuse trapezoideo, medio paullo rotundatim dilatato, deinde usque ad basin lateribus paullulum sinuatis, opaco, dense piloso, fulvo, vitta lata utrinque discoidali (intus recta extus dilacerata) nigro-viridi; scutello opaco, impunctato; elytris obtuse costatis, subtilissime punctulato-striatis, fulvis, nigro-viridi (plerumque transversim) maculatis; pygidio dense confluenter striguloso.

Long. 11–12 millim. ♂.

Hab. Mexico, Peras, Etla (*Sallé*), Jalapa (*Höge*).

The more typical examples are from Jalapa. Two from Etla and Peras are distinctly more elongate and are darker, the broad dull greenish-black thoracic vittæ invading nearly the whole surface. Eight examples, males.

25. Euphoria quadricollis.

E. nigriventri maxime affinis; differt magis elongata, thorace ante medium angulatim dilatato deinde ad basin lateribus parallelis, medio basi sicut in *E. nigriventri* minime emarginato; quoad colores vix differt, ventre rufo-nitido excepto. ♂. Antennarum clava articulis 1°–7ᵐ paullo longior; tibiæ anticæ angustæ, sicut in *E. geminata*, dentibus duobus parvis prope apicem, 3° superiore obsoleto.

Long. 12 millim. ♂.

Hab. Mexico, Durango city (*Höge*).

Two male examples, perfectly similar.

26. Euphoria atra.

Quoad formam *E. nigriventri* simillima, sed toto atra, supra opaca, subtus nitida, dense griseo-pubescens; thorace medio basi distincte sed minus quam in *E. vestita* sinuato; elytris fortiter costatis. ♂. Antennarum clava articulis 1°–7ᵐ paullo longior; tibiæ anticæ tridentatæ, dente 3° minore acuto, remoto.

Long. 12 millim. ♂.

Hab. Mexico, Peras (*Sallé*), Oaxaca (*Höge*).

Three examples, all males.

27. Euphoria vestita.

Cetonia vestita, Gory & Perch. Monogr. Cétoin. p. 271, t. 52. fig. 6 [1].
Cetonia irregularis, Gory & Perch. loc. cit. p. 272, t. 53. fig. 1 [2] (nec Olivier).
Erirhipis vestita, Burm. Handb. der Ent. iii. p. 387 [3].

Hab. Mexico [1 2 3], Oaxaca, Capulalpam, Peras (*Sallé*), Jalapa (*Höge*), Cuernavaca (*H. H. Smith*); Costa Rica, Cache (*Rogers*).

Burmeister describes this species as having, in the male, an excessively large antennal club and nearly simple anterior tibiæ. A few male examples answering to this description, with females corresponding in size and colour, have been received from the above-mentioned localities. The figures cited from Gory and Percheron represent

females, and are indeterminable, but in general form and markings they agree with this species. *E. vestita* is larger (15 millim.) than any of the preceding species, and more convex and elongate-ovate in the males, this sex having the antennal club twice the length of the remaining joints, and correspondingly broad. The thorax is trapezoidal, but rather elongated, and is strongly arcuate-sinuate in the middle of the base.

28. **Euphoria eximia.**

♂. Oblonga, virescenti-nigra, supra opaca, breviter erecte pilosa, thorace vitta utrinque marginali pygidioque maculis duabus magnis, cretaceo-albis; thorace maculis tribus basalibus elytrisque maculis numerosis et fascia maculari ante apicem rufo-aurantiacis; corpore subtus nigro-polito, ventris segmentis 1°–5^{m} utrinque cretaceo-albo fasciatis; capite nigro, confluenter punctato, clypeo valde elongato lateribusque rotundatis, margine mediocriter reflexo apicali medio depresso-sinuato. Antennarum clava maxime elongata; tibiæ anticæ graciles, prope apicem breviter bidentatæ. Processus sternalis brevis et valde dilatatus, apice paullo rotundato.

Long. 14 millim.

Hab. Costa Rica (*Sallé, Van Patten*). Two examples only, both males.

29. **Euphoria humilis.**

Euphoria humilis, Blanchard, Cat. Coll. Ent. i. p. 13[1].

Hab. Mexico[1] (*Sallé, ex coll. Sturm*), Peras (*Sallé*), Oaxaca (*Höge*).

Closely allied to *E. atra*, but larger, more oblong, and always glabrous above and beneath, generally black; the antennal club in the male is scarcely longer than joints 1–7; the scutellum is shining, and more or less punctured, the punctuation generally confined to the base; the elytral costæ are narrower and more strongly elevated; and the grey pubescence of the under surface is dense on the sides of the ventral segments. Some examples have traces of reddish spots at the base (sometimes at the sides) of the thorax and on the elytra, or are reddish-tawny, with two broad dusky vittæ on the thorax and the elytra marbled with dusky; these specimens are not easily to be distinguished from abraded examples of *E. vestita*, the sinuation of the basal lobe of the thorax is, however, considerably less.

30. **Euphoria subguttata.**

Erirhipis subguttata, Burm. Handb. der Ent. iii. p. 392.

Hab. Mexico[1].

This species is not contained in our collection. It is compared with the North-American *E. fulgida*, but is stated to be opaque above, emerald-green or golden-coppery, with the limb of the thorax and numerous spots and the apical margin of the elytra white.

VII.

31. **Euphoria geminata.**

Cetonia geminata, Chevr. Col. Mex. Cent. ii. fasc. 5, no. 107 [1].
Erirhipis geminata, Burm. Handb. der Ent. iii. p. 386 [2].

Hab. Mexico [1 2], Ventanas in Durango (*Höge*, *Forrer*), Vera Cruz (*Sallé*), Tonila in Colima, Colima city, Tapachula in Chiapas (*Höge*); Guatemala, Tactic (*Conradt*).

The unicolorous black variety described by Burmeister is distinguishable from *E. atra* by the two chalky-white spots of the pygidium, and the much narrower and elongate form. A beautiful variety was captured by Höge at Colima city, black, with the thorax broadly margined with rich red. The typical form was found by Höge in great profusion at Tapachula, on the lower part of the Pacific slope.

The form of the clypeus differs from that of the species included in Section VI. in the apical margin being greatly elevated, and deeply emarginated in the middle. The male anterior tibiæ are long and slender, often with only one (terminal) tooth, and when bidentate the upper tooth is obtuse, and separated from the apical one by a deep sinuation. This structure is quite different from that of *E. vestita* and *E. eximia* of Section VI.

VIII.

32. **Euphoria inda.**

Scarabæus indus, Linn. Mus. Lud. Ulr. p. 27; Syst. Nat. i. 2, p. 556.
Cetonia inda, Oliv. Ent. i. 6, p. 39, t. 5. fig. 29.
Erirhipis inda, Burm. Handb. der Ent. iii. p. 389 [1].
Euphoria inda, Horn, Proc. Am. Phil. Soc. 1879, p. 407 [2].
Cetonia barbata, Say, Journ. Acad. Phil. ii. p. 239 [3].
Cetonia brunnea, Gory & Perch. Monogr. Cétoin. p. 267, t. 51. fig. 6 [4].

Hab. North America [1 3 4], east of Rocky Mountains [2].—Mexico [1], Puebla, Guanajuato, Chalchicomula (*Sallé*), Mexico city, Zapotlan in Colima (*Höge*).

Mexican examples are, on the average, smaller than those from the Eastern States; I can detect no other general difference.

33. **Euphoria subtomentosa.**

Cetonia subtomentosa, Mannerh. Bull. Mosc. viii. p. 135 (1837).
Erirhipis subtomentosa, Burm. Handb. der Ent. iii. p. 390 [1].
Cetonia tomentosa, Gory & Perch. Monogr. Cétoin. p. 278, t. 54. fig. 3 [2].

Hab. Mexico [1 2], Puebla, Parada, Guanajuato, Izucar, Oaxaca (*Sallé*), Guadalajara, Cuernavaca, Zapotlan in Colima (*Höge*).

34. **Euphoria histrionica.**

Euphoria histrionica, Thomson, Typi Cetonid. p. 27 [1].

Hab. Mexico [1], Cordova (*Sallé*).

Var. *E. sonoræ*. Angustior, scutello utrinque multipunctato.

Hab. Sonora (*coll. Bates*).

Allied to *E. subtomentosa*. The clypeus is short and broad, but not quite so broad or rectangular as in that species. The elytral costæ (especially the outer ones) are not nearly so elevated, and the ochreous spots are not arranged in three longitudinal rows, but are in extremely irregular and variable transverse macular streaks; the apex is broadly ochreous, with a denuded spot in the centre, and there are some transverse streaks on the lateral margins almost as in *E. lineoligera*. In fact *E. histrionica* seems to connect the last-named with *E. subtomentosa*. The antennal club in the male is as long as joints 1–7, but still not notably elongated, as the whole antenna is short.

35. **Euphoria kerni.**

Euphoria Kernii, Haldeman, Stansbury's Explor. p. 374, t. 9. fig. 10; Leconte, Proc. Acad. Phil. 1853, p. 440; Horn, Proc. Am. Phil. Soc. 1879, p. 402[1].

Euphoria Clarki, Leconte, loc. cit. p. 441.

Euphoria texana, Schaufuss, Sitz. Ges. Isis, 1863, p. 113.

Hab. North America, Kansas to Texas[1].—Mexico, Durango city (*Höge*).

The Mexican examples closely agree with others from Texas.

CHLORIXANTHE.

Corpus elongato-oblongum, supra deplanatum, glabrum. Caput latum; oculi valde convexi; clypeus late quadratus, antice late et recte truncatus marginibus reflexis. Antennæ breves, clava ♂ ♀ mediocri. Thorax medio basi valde emarginatus, basi utrinque valde flexuoso juxta scutellum angulatim producto, margine laterali late incrassato. Scutellum elongatum, lateribus longe sinuatis, apice subrotundato. Elytra æqualia, nullo modo costata. Pedes robusti, tibiæ 4 posticæ extus medio acute unidentatæ, apice dentibus 3 elongatis. Mesosternum valde et late productum, late lanciforme, planatum. Tibiæ anticæ breviter tridentatæ, dentibus duobus inferioribus contiguis et conjunctim productis, 3° superiore longe remoto in ♂ parvo obtuso, in ♀ valido et acuto. Tarsi robusti, incrassati, articulis arcte colligatis.

A genus formed for the reception of *Euphoria flavoviridis*, which, as will be seen from the above description, differs in very many structural points from all species of *Euphoria*.

1. **Chlorixanthe flavoviridis.** (Tab. XXI. fig. 12.)

Euphoria flavoviridis, Thomson, Musée Scientif. p. 36 (1860)[1].

Hab. Mexico[1], Etla (*Sallé*), Oaxaca (*Sallé*, *Fenochio*).

Subfam. *CREMASTOCHILINÆ*.

GENUCHINUS.

Genuchinus, Westwood, Thesaurus Entom. Oxon. p. 23 (1874).

Judging from Dr. Horn's figure and description of the rare North-American *Psilocnemis* (*Cremastochilus*) *leucostictus*, Burm., there appears to be little to distin-

guish *Genuchinus* from *Psilocnemis*. Both agree in the rounded outline of the thorax, and apparently in the flattened form of the mentum.

Three species were described by Westwood from Ecuador and Mexico.

1. **Genuchinus v-notatus.** (Tab. XXIII. fig. 14.)

Genuchinus v-notatus, Westw. Thesaur. Ent. Oxon. p. 24, t. 10. fig. 4[1].

Hab. Mexico[1], Cordova (*Sallé*), Jalapa, Trapiche (*Höge*); Nicaragua, Chontales (*Belt*); Costa Rica, Cache (*Rogers*).

A good series of examples has been received from Herr Höge. In all the thorax is polished and sparsely punctured.

2. **Genuchinus velutinus.**

Genuchinus velutinus, Westw. Thesaur. Ent. Oxon. p. 25, t. 10. fig. 5[1].

Hab. Mexico (*mus. Parry*[1]), Amula in Guerrero (*H. H. Smith*).

Distinguished from the preceding by its opaque and closely punctulated thorax. The punctures in two male examples recently captured by Mr. Smith are circular or ring-shaped, with the rings mostly open posteriorly, and the interstices between the rings are, in part, minutely granulated.

CREMASTOCHILUS.

Cremastocheilus, Knoch, Neue Beiträge, p. 115 (1801); Burmeister, Handb. der Ent. iii. p. 678; Horn, Proc. Am. Phil. Soc. 1879, p. 382.

A genus, so far as at present known, peculiar to North America, with its southern limits in Mexico. Deducting the numerous synonyms recently detected by Dr. Horn, the described species number twenty-three.

1. **Cremastochilus saucius.**

Cremastochilus saucius, Lec. Journ. Acad. Phil. iv. p. 16 (1858); Horn, Proc. Am. Phil. Soc. 1879, p. 386[1]; Trans. Am. Ent. Soc. 1885, p. 126, t. 4. fig. 3.

Hab. North America, Kansas to Texas[1].—Mexico, Durango city (*Höge*).

A single example supplied by Herr Höge agrees well with Dr. Horn's descriptions and figure, the only difference observed being the longer and more spiniform (straight) tooth at the base of the thorax near the hind angle.

2. **Cremastochilus planatus.**

Cremastochilus planatus, Lec. New Spec. Col. i. p. 81 (1863)[1]; Horn, Proc. Am. Phil. Soc. 1879, p. 386, t. 4. fig. 1[2].

Hab. North America, California[1], Arizona[2].—Mexico, Northern Sonora (*Morrison*).

One example only of this distinct species was received from Morrison.

3. Cremastochilus mexicanus.

Cremastochilus mexicanus, Schaum, Germar's Zeitschr. iii. p. 256; Ann. Soc. Ent. Fr. 1844, t. 11. fig. 8[1]; Burm. Handb. der Ent. iii. p. 682.

Cremastochilus Villadæ, Dugès, La Naturaleza, iv. p. 174 (1879)[2].

Hab. Mexico[1], Northern Sonora (*Morrison*), Guanajuato[2] (*Sallé, ex coll. Dugès*).

The single example received from Morrison differs from the one from Guanajuato only in the reddish-testaceous clypeus and legs; the two agree in all details of structure.

4. Cremastochilus crinitus.

Cremastochilus crinitus, Lec. Trans. Am. Ent. Soc. v. p. 55[1]; Horn, Proc. Am. Phil. Soc. 1879, p. 390, t. 4. fig. 6[2].

Hab. North America[1 2].—Mexico, Chihuahua city (*Höge*).

One example only, agreeing well with Dr. Horn's description and having the long hairs of the upper surface in a good state of preservation.

LISSOMELAS.

Magnus, elongato-oblongus, supra planatus, omnino depilatus, fere impunctatus. Caput usque ad medios oculos in thorace retractum, supra fere planum, clypeo lateribus deflexis margine antice medio reflexo. Oculi plani. Mentum late transversim ovatum, fere planum, inæquale, margine minime elevato apice angulatim prolongato. Antennæ breves, articulis 3°–7^{m} brevissimis gradatim valde latioribus. Mandibulæ parte membranacea lata supra penicillata; maxillæ sicut in *Cremastochilo*. Thorax relative parvus, subtrapezoideus, lateribus parum arcuatis, angulis anticis nullis, posticis rotundatis, medio basi leviter sinuato. Pygidium utroque sexu apice convexum. Pedes mediocres; tibiæ anticæ valde, 4 posticæ minus, triquetræ, medio extus unidenticulatæ; tarsi mediocres, supra et sùbtus eleganter plurisulcati, articulis cylindricis arcte conjunctis.

♂. Tibiæ anticæ extus denticulo obtuso vel obsoleto, apice lato et recte prolongato. Pygidium apice maxime convexum et versus ventrem inflexum; venter medio depressus, subcanaliculatus.

♀. Tibiæ anticæ distinctius bidentatæ. Pygidium apice minus subtus inflexum, dorso late planato; venter convexus.

By the form of the clypeus this genus is nearest allied to *Cremastochilus*, but the disc of the mentum is not in the slightest degree cupuliform, and more nearly resembles that of *Genuchinus*, and the form of the thorax is unlike that of any American genus of the group.

1. Lissomelas flohri.

Omnino niger, sericeo-nitidus, elytris versus basin plus minusve velutinis; capite, pygidio corporeque subtus subtilissime sparsim punctulatis; thorace, scutello elytrisque lævibus, his disco planato-subdepressis. Long. 22–25 millim. ♂ ♀.

Hab. Mexico, Ventanas in Durango (*Höge*), Mexico city (*Flohr*).

A good series of examples. In some the fine carinæ of the triquetral tibiæ are more or less chipped or ragged by wear, and in one the front edge of the clypeus is similarly, but symmetrically, broken on each side.

Fam. TRICHIIDÆ.

PANTODINUS.

Pantodinus, Burmeister, Handb. der Ent. v. p. 291 (1847); Westwood, Trans. Ent. Soc. Lond. 1878, p. 33.

Burmeister placed this extraordinary and isolated form, in which the head and thorax are cornuted, in the family Dynastidæ, notwithstanding its semimembranous mandibles; but Candèze having had an opportunity of examining both sexes, and finding that the clypeus of the female was that of a Cetonid, and the anterior femora exserted, has shown that it belongs to the melitophilous series of Lamellicornia, and that it would be best placed by the side of *Inca*, in the Trichiidæ. The species on which the genus is founded is of extreme rarity.

1. Pantodinus klugi.

Pantodinus Klugii, Burm. Handb. der Ent. v. p. 292[1]; Candèze, Compte Rend. Soc. Ent. Belg. xvi. p. xli[2]; Westw. Trans. Ent. Soc. Lond. 1878, p. 33, t. 2. fig. 2 *a*.

Hab. Guatemala[1 2].

The species is not contained in our collections.

INCA.

Inca, Serville, Encycl. Méthod. x. p. 380 (1825); Burmeister, Handb. der Ent. iii. p. 706.

This well-known genus is one of the characteristic forms of the American Coleopterous Fauna. Eight species have been described, mostly from Southern Brazil; one only extends northwards as far as Mexico.

1. Inca clathratus.

Cetonia clathrata, Oliv. Journ. d'Hist. Nat. i. p. 93, t. 6. fig. 2 (1792).
Cetonia Ynca, Weber, Obs. Ent. i. p. 66 (1805); Fabr. Syst. Eleuth. ii. p. 136.
Inca Ynca, Gory & Perch. Monogr. Cétoin. p. 103, t. 13. fig. 1.
Inca Weberi, Serv. Encycl. Méth. x. p. 381; Burm. Handb. der Ent. iii. p. 707[1].
Inca Fabricii, Perty, Del. anim. artic. Bras. p. 51, t. 11. fig. 3.
Var. ♂ cornibus apice fere truncatis.
Inca Sommeri, Westw. Arc. Ent. ii. p. 99, t. 73. figg. 1, 2 (♂ ♀)[2].

Hab. Mexico[2]; British Honduras, Cayo (*Blancaneaux*); Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui 3000 feet (*Champion*).—South America, Guiana, North Brazil[1].

In all the males I have seen from Mexico and Central America the upper inner carina of the male horns curves towards the inner apical angle, and in all those from South America towards the outer apical angle. This is a more constant difference

than the straight truncature specified by Westwood as the distinctive character of *I. sommeri*, as Mexican examples vary much in this respect, the apex being sometimes strongly sinuated.

DIALITHUS.

Dialithus, Parry, Trans. Ent. Soc. Lond. v. p. 181 (1849).

This genus contains a single species, which, so far as at present known, is peculiar to Central America.

1. **Dialithus magnificus.** (Tab. XXIII. fig. 17.)

Dialithus magnificus, Parry, Trans. Ent. Soc. Lond. v. p. 181, t. 18. fig. 4[1].

Hab. Mexico[1]; Nicaragua, Chontales (*Belt*).

Mr. Belt obtained three examples of this superb insect at Chontales, in one of which the elytra and legs are tawny-red instead of black as in Parry's type specimen. In the male the anterior tibiæ are abruptly narrowed near the apex; without upper tooth, and the apical tooth is much less prolonged than in the female.

TRIGONOPELTASTES.

Trigonopeltastes, Burmeister, in Germar's Zeitschr. ii. p. 406 (1840); Handb. der Ent. iii. p. 747.

Six species of this exclusively American genus have been described, one South Brazilian excepted, all from the United States and Mexico.

1. **Trigonopeltastes deltoides.**

Trichius deltoides, Newman, Entom. Mag. v. p. 169[1].

Trigonopeltastes deltoides, Burm. Germ. Zeitschr. ii. p. 407; Handb. der Ent. iii. p. 748[2].

Hab. Mexico[1 2].

This, the largest species of the genus, is not contained in our collection.

2. **Trigonopeltastes archimedes.**

Trigonopeltastes Archimedes, Schaum, in Germar's Zeitschr. iii. p. 235[1]; Burm. Gen. Ins. no. 34, fig. 3 (♂); Handb. der Ent. iii. p. 749[2].

Hab. Mexico[1 2], Acapulco (*Höge*).

♂. Pygidium fere planum; venter medio subglaber; tibiæ anticæ bidentatæ, medio extus late rotundatæ.
♀. Pygidium prope apicem convexum; venter medio (et metasternum) dense albido-villosus; tibiæ anticæ graciliores acutiusque bidentatæ.

This species is distinguished by its narrow oblong form, the great length of the sides of the thorax after the antemedian dilatation, and the broad quadrate black circumscutellar (including the scutellum) spot of the elytra, on the hinder margin of which a short, sometimes interrupted, fascia crosses the suture. The raised triangular plate of the thorax and adjoining parts are impunctate.

3. Trigonopeltastes simplex.

Oblongus, niger, elytris rufescenti-fulvis, sutura (et interdum dimidio posteriore) nigra, lateribus medio lineola transversa vix perspicua albida; pygidio convexo, nigro, striolato, polito, utrinque macula triangulari albo-pubescente. Subtus niger, politus, ventre utrinque maculis transversis segmentoque 5° fere toto, pectore et femoribus sparsim, albido-pubescentibus. Caput cum clypeo toto acute strigulosum; thorace paullo ante medium obtuse dilatato, angulis posticis rectis, disco triangulo profunde inciso (haud pubescente), toto sat crebre et grosse punctato, angulis anticis pubescentibus. Elytra disco planata, striis subtilissimis totis fere rectis. Tibiæ anticæ tridentatæ.

Long. 8–8½ millim. ♀.

Hab. Guatemala, San Gerónimo (*Champion*). Two female examples only.

This species is distinguished from its allies by the absence of white spots near the suture or on the scutellum, and the simple coloration of the elytra, without trace of the usual black lines and curves. There is a faint trace of the usual short lateral transverse white lineola on the elytra. The thorax in both examples is possibly abraded, and the yellow pubescence in the triangle-shaped sulci consequently wanting.

4. Trigonopeltastes geometricus.

Trigonopeltastes geometricus, Schaum, in Germar's Zeitschr. iii. p. 284[1]; Burm. Gen. Ins. no. 34, fig. 2 (♀); Handb. der Ent. iii. p. 750[2].

Hab. Mexico[1 2], Cordova (*Sallé*), Jalapa, Almolonga (*Höge*), Teapa in Tabasco (*H. H. Smith*); Guatemala, San Gerónimo (*Champion*).

The markings of the elytra, well described by Burmeister, are tolerably constant, the most characteristic being a black line arising from a broad spot behind the shoulder, which curves towards the narrow sutural vitta (with which it is connected by a short transverse line), and continuing thence down the disc nearly parallel to the suture ends in a large apical spot. The general form is shorter than in the allied species, ovate rather than oblong. The thorax is correspondingly shorter, more angularly dilated in the middle, and with the sides more or less sinuated to the hind angles, which are rectangular or acute; the yellow triangular signature of the disc is short, and the grooves in which it lies are strongly impressed, but not quite so strongly and broadly as in *T. archimedes* and *T. simplex*, and in the S. Brazilian *T. triangulum*. The sexes closely agree, and I do not find that the female is differently coloured to the male or smaller than it, as stated by Burmeister, who must have had before him a variety in describing the female. The typical state varies slightly in its elytral markings, the short transverse lineole being sometimes absent, and in other cases the longitudinal curved line interrupted; the following recede further from the type-form:—

Var. *T. nigrinus*. Niger, opacus, elytris utrinque versus humeros macula rotunda aurantiaca. Thorax angustior, triangulo profundius impresso; pygidium flavo-pubescens, vitta angusta integra; venter segmentis 1°–4^m 5°que dimidio medio tantum flavo-tomentosis, lateribus late et 6° glabris nitidis.

Long. 7½ millim. ♂.

Hab. Mexico, Cordova (*Sallé*). One example.

Var. *T. intermedius.* Magis elongatus, capite toto crebre punctato-ruguloso; thorace paullo longiore, ante medium dilatato, postice sinuatim angustato, angulis posticis rectis vel paullulum obtusis, longiore (apice acutiore), triangulo sat profunde impresso; elytris linea nigra curvata ab macula posthumerali usque ad suturam biflexuose extensa (suturam interdum haud attingente), a linea longitudinali disjuncta.

♂. Venter et metathorax medio albo-villosi; tibiæ anticæ dente 3° obtuso.

Long. 9 millim. ♂ ♀.

Hab. Mexico, Yolos, Chiapas (*Sallé*). Five examples.

An example of Sturm's in the Sallé collection, differing only in the irregular thickness of the flexuous subbasal fascia of the elytra, is labelled (in Sturm's handwriting) *T. deltoides*, Newm.

5. **Trigonopeltastes sallæi.** (Tab. XXIII. figg. 15; 16, 18, vars.)

T. geometrico proxime affinis; major; thorace longiore, medio multo obtusius dilatato, postea recte angustato, angulis posticis obtusis (rarissime acutis), triangulo flavo longiore, basi plerumque utrinque abbreviata; elytris sicut in *T. geometrico*, sed macula communi magna transversa post scutellum, interdum maculam humeralem attingente sed haud per lineam flexuosam connexa, linea longitudinali ab apice obliqua antice abbreviata.

Long. 9–10 millim. ♂ ♀.

Hab. Mexico, Tehuantepec (*Sumichrast, in coll. Sallé*), Almolonga, Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); Nicaragua, Chontales (*Belt*).

Variat:—1. Elytris maculis nigris, humerali et suturali deficientibus: Chontales. 2. Elytris maculis nigris omnino obsoletis: Yucatan. 3. Thorax postice magis angustatus, angulis posticis subacutis: Yucatan, Chontales.

A large series of this insect was obtained by Herr Höge at Almolonga, offering scarcely any variation, and giving the impression of a species very distinct from the series of *T. geometricus* from Cordova, which is also found at Almolonga. The differences between the two forms are, however, to a great extent bridged over by the var. *intermedius* described above, and slighter individual variations. The Tehuantepec examples bear the MS. name of *T. elongatulus* in the Sallé collection. The following variety is somewhat more distinct:—

Var. *T. frontalis.* Thorax sicut in *T. sallæi* postice recte angustatus angulisque posticis obtusis; niger, fronte cum clypei basi fulvo-villosa; thorace triangulo minus elongato, parum sulcato; elytris fulvis, linea curvata subbasali abbreviata vel interrupta, linea recta longitudinali a medio usque ad apicem maculaque ovata submarginali (lineola transversali alba includente) fusco-nigris; pygidio albo-tomentoso, (♂) medio vitta, (♀) macula latiore, nigra, glabra, basi haud attingente; pedibus antennisque fulvis. ♂. Venter sternaque toto albido-tomentosi; tibiæ anticæ bidentatæ. ♀. Venter medio anguste segmentorumque marginibus solum glabratis.

Long. 9½ millim.

Hab. Mexico, Playa Vicente (*Sallé*). Two examples.

The Mexican species of the genus evidently tend to form local varieties, and many more no doubt remain to be discovered.

6. Trigonopeltastes carus.

T. geometrico affinis, adhuc brevior, niger, supra opacus, subtus politus; thorace triangulo lato et brevi profunde impresso flavo-pubescente; elytris utrinque linea curvata basali, fascia transversali laterali ad trientem longitudinem, alteraque obliqua apicem versus, flavis, medioque lineola tenuissima laterali transversa alba; scutello suturaque basi immaculatis; clypeo sat elongato et angusto; thorace paullo ante medium valde angulatim dilatato deinde tam antice quam postice sinuatim angustato, angulis posticis productis acutis. Pygidium sericeo-flavo tomentosum, medio vitta nigra glabra. ♂. Venter medio sternaque utrinque breviter albo-fasciata. ♀. Subtus (femoribus antice exceptis) toto glabra.

Long. 7 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 3000 feet (*Champion*).

Two examples only, one of each sex. The yellow lines of the elytra evidently vary in extent, and appear to be the rudiments of the more developed lines of similar colour in the allied species.

7. Trigonopeltastes linea.

Trigonopeltastes linea, Burm. in Germar's Zeitschr. iii. p. 235; Gen. Ins. no. 34, fig. 5 (♂); Handb. der Ent. iii. p. 752[1].

Trigonopeltastes quadrisignatus, Schaum, in Germar's Zeitschr. iii. p. 236.

Trigonopeltastes quadriguttatus, Burm. Gen. Ins. no. 34, fig. 4 (♂); Handb. der Ent. iii. p. 752[2].

Hab. Mexico[1 2].

Unknown to me.

CŒLOCRATUS.

Cœlocratus, Burmeister, in Germar's Zeitschr. iii. p. 242 (1841); Handb. der Ent. iii. p. 767.

One species only has hitherto been described of this genus, from "the interior of Northern Brazil." I refer the following, smaller, Mexican species to the genus owing to the very similar form of the clypeus (in which *Cœlocratus* differs from all other genera of Trichiidæ), viz. transverse-quadrate, with straight front edge and equally raised fore and lateral margins. The Mexican insect also agrees in the form of the thorax and elytra, and in the anterior tibiæ having two outstanding teeth in both sexes, but it differs in the middle tibiæ of the male not being bowed.

1. Cœlocratus ænescens. (Tab. XXIII. fig. 13.)

Oblongo-ovatus, parum convexus, toto erecte (apud caput et thoracem multo longius) pubescens, viridi-æneus vel obscure æneus, nitidus; elytris opacis, testaceo-rufis vel fulvis, sutura et marginibus, vitta utrinque angusta recta, antice abbreviata, dorsali, vittaque latiore curvata et intus bilobata laterali, obscure viridi-æneis, interdum vagis et subobsoletis; thorace fere sicut in *Trichio fasciato* rotundato, angulis posticis vix distinctis, antice angustato angulis acutis, sat dense punctato; elytris striis nonnullis subtilissimis et sparsim subtilissime punctulatis; pygidio ♂ longe fulvo-villoso, subverticali, ♀ breviter pubescente, marginibus dense albido-squamulosis.

Long. $10\frac{1}{2}$–$12\frac{1}{2}$ millim. ♂ ♀.

Hab. Mexico (*Sallé*).

Four examples, labelled "*Trichius*, sp.", in the Sallé collection.

SUPPLEMENT.

The following supplementary pages contain descriptions of the new species received during the progress of the present volume, together with indications of new localities for species previously recorded and a few rectifications of synonymy, errors, and omissions that have been detected since the foregoing parts were published.

PSEUDOLUCANUS (p. 1; to precede the genus *Cantharolethrus*).

Pseudolucanus (Hope), Parry, Trans. Ent. Soc. Lond. 1870, p. 72.

According to Major Parry this genus includes four described species, viz. one North-American, one peculiar to the Mediterranean region, one Indian, and the following from Northern Mexico:—

1. Pseudolucanus mazama.

Dorcus Mazama, Leconte, Proc. Acad. Phil. 1861, p. 345; Parry, Trans. Ent. Soc. Lond. 3rd ser. ii. p. 51[1].

Pseudolucanus Mazama, Parry, Trans. Ent. Soc. Lond. 1870, p. 72.

Hab. Mexico[1], Santa Clara in Chihuahua (*Höge*).

I am indebted to Mr. Flohr for calling my attention to this species, which was overlooked in the former part of this work. It has since been captured in large numbers by Herr Höge.

ÆSALUS (p. 2).

2 (a). Æsalus smithi.

Æ. neotropicali valde affinis et similis; differt statura paullo majore coloreque subænescenti-fusco et præcipue cantho oculari multo breviore et latiore; supra nitidior, sparsius et discretius umbilicato-punctulatus, setulis griseo-fuscis (haud nigro-fuscis) brevioribus et sparsioribus, elytrisque interstitiis planis.

Long. 5 millim.

Hab. Mexico, Chilpancingo in Guerrero (*H. H. Smith*). One example only.

The much shorter and broader canthus of the eyes is the principal character which distinguishes this species from *Æ. neotropicalis*, the length of the canthus being scarcely one fourth the width of the eye and its ridge arcuated, whilst in *Æ. neotropicalis* it is about one half the length of the eye and linear, with a straight ridge. Compared with a good series of *Æ. neotropicalis* the surface is conspicuously more shining, due to the more separated punctures and correspondingly sparser setæ, which latter are also shorter and lighter in colour.

PROCULUS (p. 3).

Proculus goryi (p. 3).

To the localities given, add:—Mexico, Tapachula in Chiapas (*Höge*).

PROCULEJUS (p. 4).

6 (A). **Proculejus nudicostis.**

A *P. championi* differt elytris relative longioribus, dorso subplanatis, punctato-sulcatis. In hoc genere elongatus, niger, nitidus; cornu verticis porrectus, compresso-conicus, acutus, carinisque valde divaricatis et brevibus inermibus, tuberculo valido, compresso-conico, utrinque a carina late separato et supra clypei angulum sito; frons brevis, clypei margine simplici; mandibulæ apice tridentatæ; thorax sat magnus, quadratus, cum fovea laterali lævis, sulco marginali punctato antice juxta collum terminato ibique nullo modo dilatato; elytra thorace duplo longiora, medio dorso depressa, punctato-sulcata, interstitiis totis lævissimis.
Long. 37 millim.

Hab. Mexico, Chilpancingo in Guerrero (*H. H. Smith*). Two examples.

In the punctate-sulcate elytra this species resembles *P. brevis* (Truqui), and in the glabrous sides of the elytra and thorax *P. championi*, Bates; but it differs from both in the more elongate and dorsally-flattened elytra and in the longer "horn" of the vertex, which is porrect and compressed, and also in the abbreviated frontal carinæ, from the ends of which the tubercle is removed to the anterior angles of the forehead.

PLATYVERRES (p. 9).

Platyverres intermedius (p. 9).

To the Mexican localities given, add:—Omilteme and Amula in Guerrero 6000 to 8000 feet (*H. H. Smith*).

RIMOR (p. 10).

Rimor sagittarius (p. 10).

To the Mexican localities given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The numerous examples from Omilteme are much larger (40 millim.) than those taken at Orizaba by M. Sallé (34 millim.).

POPILIUS (p. 11).

Popilius granulifrons (p. 12).

To the Guatemalan localities given, add:—Capetillo (*Rodriguez*).

NELEUS (p. 14).

Neleus tlascala (p. 14).

To the localities given, add:—HONDURAS, Ruatan Island (*Gaumer*).

Neleus interstitialis (p. 15).

To the localities given, add:—MEXICO, Teapa in Tabasco, Atoyac in Vera Cruz (*H. H. Smith*), Temax in North Yucatan (*Gaumer*), Tabi in Yucatan (*F. D. G.*).

RHODOCANTHOPUS (p. 15).

Rhodocanthopus maillei (p. 15).

To the localities given, add:—MEXICO, Omilteme and Amula in Guerrero, Teapa in Tabasco (*H. H. Smith*).

PTICHOPUS (p. 17).

Ptichopus angulatus (p. 17).

To the localities given, add:—MEXICO, Dos Arroyos in Guerrero (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

UNDULIFER (p. 18).

Undulifer incisus (p. 18).

To the Mexican localities given, add:—Omilteme in Guerrero (*H. H. Smith*).

SORANUS (p. 19).

9. **Soranus depressifrons.**

S. recticorni similis, sed elytris relative longioribus. Sat anguste elongatus, politus; labrum antice paullo angustatum, sinuato-truncatum, grosse punctatum; clypeus latus, lævis, margine subrecto; frons toto depressa, medio transversim concava, piloso-punctata, cornu frontali nullo carinisque brevissimis; thorax relative parvus, antice distincte angustatus, subtiliter punctulatus, juxta marginem anticum fere sicut in gen. *Veturio* paullo prominens et convexus, sulco marginali antice lato et profunde fere usque lineam dorsalem extenso, lateribus impunctatis foveaque transverse lævi; elytra relative elongata, dorso subdepressa, punctato-sulcata; prothorax subtus tibiæque dense fulvo-hirsuta.

Long. 25 millim.

Hab. MEXICO, Huitzilac in Morelos (*Höge*). Two examples.

The leaflets of the antennal club are short (not more than twice as long as the joints), but the species does not well fit into any of the genera of the restricted group 'Passalini' which have this character. The prominence of the anterior margin of the thorax in the middle, limited on each side by the end of the deep and broad marginal sulcus, is a character of the genus *Veturius*; it is, however, only slight in the present case, and

the small head, strongly-punctured elytra, and facies show a closer relationship to *Soranus* than to *Veturius*, in which the head is remarkably broad, and the elytra finely punctulate-striate.

PASSALUS (p. 21).

Passalus striatopunctatus (p. 22).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*).

VERRES (p. 23).

Verres corticicola (p. 24).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*).

CANTHON (p. 26).

Canthon speciosus (p. 27).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*).

Dr. Horn (Trans. Am. Ent. Soc. 1870, p. 45) gives this name as synonymous with *C. cyanellus*, Lec., from Texas. The two species are, in fact, almost identical in form and in the deeply emarginate clypeus, bispinose in the emargination, and differ only in the punctuation of the upper surface, which in the Texan species is very distinct though fine, imparting to the elytra a slight opacity, whilst in all Mexican examples it is scarcely perceptible with a strong lens, and the whole surface is highly polished.

Canthon euryscelis (p. 28).

To the localities given, add:—MEXICO, Atoyac in Vera Cruz, Teapa (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

Canthon viridis (p. 30).

To the localities given, add:—MEXICO, Rincon in Guerrero (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

Many specimens have lately been received from Yucatan, nearly all of the dark violet form, a few only having the thorax tinged with green.

Canthon gagatinus (p. 33).

M. Sallé has pointed out to me that this species, or its blue variety *C. amethystinus*, Harold, is the *Ateuchus humectus* of Say, a name omitted by Harold and Gemminger in the Munich Catalogue, and also by Harold in his monograph of the genus *Canthon*. Dr. Horn also informs me that *C. indigaceus* of Leconte belongs to the same species. The synonymy therefore will stand thus:—

23. **Canthon humectus.**

Ateuchus humectus, Say, New Sp. N. Amer. Ins. p. 4 (1832); Leconte, Complete Writings Th. Say, i. p. 301 [1].

Canthon gagatinus, Har. Ann. Soc. Ent. Fr. 1863, p. 173.

Var. *Canthon amethystinus,* Har. loc. cit.

Canthon indigaceus, Leconte, Proc. Ac. Phil. 1866, p. 380 [2].

To the localities given, add:—NORTH AMERICA, Arizona [2].—MEXICO [1], Amula and Mescala in Guerrero (*H. H. Smith*).

All the examples from Guerrero are of the black variety.

Canthon chevrolati (p. 33).

To the localities given, add:—MEXICO, Mescala, Chilpancingo, Venta de Zopilote, Amoquileca 6000 feet in Guerrero, Cuernavaca (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); GUATEMALA, Capetillo (*Rodriguez*).

I give these localities, which add nothing of importance to the range previously recorded, simply to note that all the very numerous examples from Capetillo are of the violet-black form, all from Guerrero bright green, and all from Temax blackish-green, especially on the elytra.

PSEUDOCANTHON (p. 35).

2. **Pseudocanthon chlorizans.**

Canthon chlorizans, anteà, p. 34.

To the Mexican locality given, add:—Temax in North Yucatan (*Gaumer*).

A large series has been received from the above-named locality, and on further studying the species I find that it has all the characters of the genus *Pseudocanthon*—the longer mesosternum separated from the metasternum by a sharp straight suture, the flexuous inner edge of the fore tibiæ, and the sides of the thorax parallel from the base to near the anterior angles, and thence sharply narrowed to the apex. I am inclined now, however, to doubt the generic importance of the longer and sharply delimited mesosternum, as this character is somewhat variable in the genus *Canthon*, *C. transversalis*, Har., and *C. balteatus*, Boh., belonging to distinct sections of the genus, having the same form of this segment as *Pseudocanthon*.

P. chlorizans is of a glossy, but not deep black colour, often with a slight greenish tinge, but without pale markings; the legs are always testaceous-red; the elytra, especially behind, are studded with minute shining hair-scales, as in *P. perplexus*. The prothoracic cavity beneath near the anterior angles is deep and sharply margined.

EURYSTERNUS (p. 39).

Eurysternus claudicans (p. 39).

To the localities given, add:—Mexico, Atoyac (*Flohr*); Guatemala, Coban in Vera Paz (*Conradt*).

CANTHIDIUM (p. 47).

Canthidium puncticolle (p. 47).

To the localities given, add:—Mexico, Atoyac in Vera Cruz (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

2 (a). **Canthidium smithi.**

C. puncticolli proxime affine; majus verticeque binodoso; quadrato-ovatum, viridescenti-nigrum; clypeus bidentatus; thorax valde convexus, dorso postice sulco lato sed haud profundo cum basi tota grosse punctata, cætera superficie dense et minute punctulata; elytra striata, striis vix perspicue punctulatis, interstitiis obsolete coriaceo-punctulatis; pygidium paullulum convexum, sparsim subtiliter punctulatum, medio fovea magna parum profunda. Mesosterni episterna grosse arcuatim rugosa, metasterni lateribus arcuatim aciculatis. Tibiæ anticæ apice recte truncatæ, intus apice in ♂ acute productæ.

Long. 8 millim. ♂ ♀.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*). Two examples.

The two prominences on the crown are large and only very slightly elevated, probably worn; the third or frontal tubercle, conspicuous in *C. puncticolle*, is entirely wanting.

COPRIS (p. 53).

Copris rebouchei (p. 54).

To the localities given, add:—Mexico, Puente de Ixtla in Morelos 3500 feet, Mescala and Tepetlapa in Guerrero (*H. H. Smith*).

Copris boucardi (p. 54).

To the Mexican locality given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

PHANÆUS (p. 55).

Phanæus pluto (p. 56).

To the localities given, add:—Amula in Guerrero (*H. H. Smith*).

2 (a). **Phanæus mimæformis.**

Phanæus mimæformis, Ancey, Le Naturaliste, 2e Année, 1880, p. 205 [1].

Hab. Costa Rica [1].

Unknown to me.

Phanæus scutifer (p. 60). (Tab. XXIV. figg. 1, 1 *a*, ♀.)

Mr. Flohr has sent me the female of this species from Oaxaca, which is remarkable for the distinct although short horn in the middle of the vertex:—

♀. Læte viridi-metallicus, capite fere toto, thorace processu antico callisque posticis necnon signaturis disci vermiculatis elytrisque callo humerali nigris. Vertex cornu brevi erecto armatus; thorax dorso antico processu subquadrato acute marginato, antice fere verticali, punctato et utrinque fovea profunda lævi oblonga delimitata.

Long. 25 millim.

The anterior dorsal prominence is an exaggeration of that of *P. quadridens* (Say) ♀, its front face forming a steep slope to the fore margin of the thorax.

Phanæus daphnis (p. 61).

To the Mexican localities given, add:—Amula 6000 feet, Omilteme 8000 feet, and Chilpancingo 4600 feet, in Guerrero (*H. H. Smith*).

Phanæus eximius (p. 62).

To the localities given, add:—Guatemala, Chimaltenango 6000 feet (*Conradt*).

22 (A). **Phanæus tepanensis.** (Tab. XXIV. figg. 2, 2 *a*, ♂; 3, 3 *a*, ♂, var.)

P. beltiano affinis et subsimilis. Oblongo-quadratus, supra minus nitidus, obscure viridis, viridi-æneus, cupreo-æneus vel cæruleus, elytris latius quam in *P. beltiano* opaco-sulcatis interstitiisque angustius nitido-culminatis. Caput antice subtiliter transversim rugulosum. Thorax basi ♂ ♀ medio bipunctatus. Subtus niger, læviter æneus vel cæruleus.

♂. Cornu capitis elongatum, curvatum, acutum, versus basin parum sed distincte dilatatum, antice creberrime punctulatum. Thorax disco triangulariter planatus declivis, grosse vermiculato-granulatus, angulis posticis elevatis acutis, margine postico anguste lævigato, in medio triangulariter dilatato apiceque trianguli elevato acuto.

♂ minor. Cornu capitis brevissimum. Thorax postice convexus, antice dorso medio depressus, disco tuberculis duobus lævibus.

♀. Vertex carinula trinodosa; thorax confluenter ruguloso-punctulatus, prope apicem medio carina brevi arcuata unituberculata foveaque lata parum profunda.

Long. 20–23 millim.

Hab. Guatemala, Tepan (*Conradt*).

The bronzed examples of this species much resemble *P. beltianus*, but the surface is less shining and the opaque sulci of the elytra are much broader. In the form of the thorax it comes nearer *P. palliatus*, the hind angles of the flattened triangular disc being as in that species more elevated, and the keel which extends from the sharp apex of the angle towards the lateral fovea is flexuous.

Phanæus pilatei (p. 65).

To the Mexican locality given, add:—Temax in North Yucatan (*Gaumer*).

On examination of the large series obtained from Mr. Gaumer I find that the two tubercles or rough ridge in the middle of the triangular declivity of the thorax are

present only in the most highly-developed males; in those of medium and lower development there is no trace of them.

Phanæus damon (p. 65).

To the localities given, add :—Mexico, Dos Arroyos, R. Papagaio, Venta de Pelegrino, Tierra Colorada and Acapulco in Guerrero (*H. H. Smith*).

31. **Phanæus obliquans.**

Phanæus mirabilis, anteà p. 65 (nom. præocc.).

It is necessary to change the name of this insect, as it is preoccupied by Harold for another species of the same genus.

32. **Phanæus excelsus.** (Tab. XXIV. figg. 4, 4 *a*, ♂ ; 5, 5 *a*, ♂ , var.)

Phanæus damon, var., anteà p. 65.

P. damon proxime affinis, sed differt colore nigro-chalybæus plus minusve plumbeo-viridi tinctus, minus resplendens.

♂ major. Cornua thoracis altiora, verticalia, apice haud dilatata nec angulis productis; thorax angulis anticis acutioribus, ante medium acutius angulatus.

♂ minor et ♀. A *P. damon* præter colorem haud diversus.

Long. 16–22 millim.

Hab. Guatemala, Capetillo (*Rodriguez*), Tocoy (*Champion*); Nicaragua, Chontales (*Janson*).

Ten examples, including two male major, which agree perfectly in the form of the thoracic horns, these being higher, narrower, and more vertical than in *P. damon*, ♂, of the same development, and their posterior angles are not produced. In all examples the general colour is violet-black, the fore part of the body and sometimes the elytra metallic green, more or less plumbeous or silvery in tint.

A fully-developed male from Chontales, and a male minor from Capetillo are figured.

ONTHOPHAGUS (p. 66).

Onthophagus nitidior (p. 67).

To the localities given, add :—Mexico, Xucumanatlan in Guerrero 7000 feet (*H. H. Smith*). Females only.

Onthophagus crinitus (p. 68).

To the locality given, add :—Mexico, Teapa in Tabasco (*H. H. Smith*).

Onthophagus rhinolophus (p. 69).

To the localities given, add :—Guatemala, Coban in Vera Paz (*Conradt*).

Onthophagus guatemalensis (p. 73).

To the localities given, add :—GUATEMALA, Chimaltenango (*Conradt*).

Onthophagus landolti (p. 75).

To the localities given, add :—MEXICO, Temax in North Yucutan (*Gaumer*).

Onthophagus chevrolati (p. 80)

Add :—

Var. *O. omiltemius.* ♂. A typo differt thoracis gibbere medio tumorem prominentem rotundatum simplicem efficiente.
Long. 11 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Mr. Smith obtained two well-developed males and one male minor, with several females of this form, which may prove to be distinct from *O. chevrolati*. In the latter the middle anterior protuberance of the thorax is broad and rather concave in front; in the var. *omiltemius* it is narrower, and forms a simple tuberiform prominence. There is a distinct tubercle on the crown as in *O. chevrolati*; the surface is opaque, bronzed-black, with fine and sparse punctuation on the thorax. The females are of the same colour, but the surface is silky and undulating; and they are distinguishable from the same sex of the following (*O. undulans*) only by their colour.

39 (A). Onthophagus undulans. (Tab. XXIV. figg. 6, 6 *a*, ♂.)

O. chevrolati proxime affinis, differt colore sericeo-nigro, superficie inæquali sicut in *O. totonicapamo* sed glabra et thorace sparsissime punctulato.
♂ major. Clypeus margine apicali valde reflexo medio paullo producto, angulis rotundato-productis, vertice simplice vel carinulato. Thorax gibbere utrinque lateraliter in dentem validum producto, lobo anteriore angusto subcompresso simplici.
♂ minor. Clypeus fere semicircularis. Thorax gibbere minore sed lobo anteriore rotundato simplice.
♀. Caput bicarinatum. Thorax antice medio convexo et bituberculato.
Long. 8½–10 millim.

Hab. MEXICO, Omilteme 8000 feet, and Chilpancingo 4600 feet in Guerrero (*H. H. Smith*).

41 (A). Onthophagus inflaticollis. (Tab. XXIV. figg. 7, 7 *a*, ♂; 8, ♀.)

O. chevrolati affinis; brevis, niger, capite thoraceque politis, elytris et pygidio opacis, thorace grosse sparsim punctato, elytris subtiliter punctulato-striatis interstitiis sparsissime setifero-punctulatis. Caput rugoso-punctatum, genis ante oculos ♂ magis ♀ minus rotundato-dilatatis.
♂ major. Clypeus late quadratus, concavus, margine antico medio paullo producto; vertex flexuoso-carinatus, fronte obtuse carinata. Thorax elytris paullo longior et dimidio latior, maxime convexus, margine ante medium breviter alte arcuato, gibbere antice verticali utrinque angulato, lobo mediano parum producto antice convexo. Tibiæ anticæ elongatæ, apice curvatæ.
♂ minor. Clypeus semicircularis. Thorax gibbere minus convexo, angulis lateralibus loboque anteriore subobsoletis.
♀. Clypeus obtuse triangularis, apice bidentatus. Thorax æqualiter convexus.
Long. 7–9 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

This singular species is an extreme form of the *O. chevrolati* group. With legs extended it resembles in general form and proportions the genus *Eucranium* of the La Plata region.

ONITICELLUS (p. 82).

Oniticellus monstrosus (p. 83).

I learn from Mr. Flohr that this eccentric species occurs, so far as he is aware, only in ants' nests.

2. **Oniticellus rhinocerulus.** (Tab. XXIV. figg. 9, 9 *a*, ♂; 10, 10 *a*, ♂, var.)

O. californico (Horn) affinis; differt ♂ majore, genis angulatim dilatatis cornuque clypei versus apicem gradatim dilatato. Oblongus, dorso subplanatus, obscure ænescenti-niger, opacus; capite lævi; thorace sparsim sat grosse punctato; elytris striis haud impressis, nitidis, distanter punctulatis interstitiisque sparsim setifero-punctulatis; corpore subtus polito fere lævi.

♂ major. Clypeus apice cornu mediocre versus apicem gradatim dilatatus apiceque sinuato; vertex cornu parvo acuto; genis dilatatis acute angulatis. Thorax dorso postice planato, antice profunde triangulariter retuso et obtuse bicornuto.

♂ minor. Clypeus cornu apicali brevissimo versus apicem angustato; vertex tuberculo conico parvo; genis multo minus dilatatis, angulatis. Thorax dorso fere integro, juxta marginem anticum tantum obsolete retuso.

♀. Clypeus apice inerme; vertex tuberculo parvo; thorax omnino inermis.

Long. 9–12 millim.

Hab. Mexico, Canelas in Durango (*Becker*), Omilteme in Guerrero 8000 feet (*H. H. Smith*).

We figure a fully-developed male and a male minor.

APHODIUS (p. 83).

Aphodius sallæi (p. 84).

To the localities given, add:—Mexico, Mescala in Guerrero (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

Aphodius indutilis (p. 84).

To the localities given, add:—Mexico, Amula in Guerrero (*H. H. Smith*).

13. **Aphodius cruentatus.**

Aphodius cruentatus, Lec. U.S. Geol. Surv. Hayden, p. 456; Horn, Trans. Am. Ent. Soc. xiv. p. 52 (1887).

Aphodius, sp. no. 13, anteà p. 86.

To the locality given, add:—North America, New Mexico, Arizona.

According to Dr. Horn, our insect from Sonora is *A. cruentatus*, Lec.

16 (A). **Aphodius constricticollis.** (Tab. XXIV. fig. 11.)

Elongato-oblongus, mediocriter convexus, piceo-niger, politus, pedibus rufo-piceis, antennis tarsisque pallidioribus; capite lævissimo, inermi, clypeo fere semicirculari apice vix perspicue truncato, genis parum prominentibus; thorax quadratus, post medium paullo constrictus, apud angulos posticos subrectos iterum paullulum dilatatus, prope angulos anticos leviter angustatus, dorso subconvexo lævissimo, lateribus parce punctatis, basi marginata; scutellum mediocre; elytra striata, striis subtilissime punctulatis, interstitiis paullulum convexis; tibiæ anticæ punctulatæ.

Long. 7 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The bristles at the apex of the posterior tibiæ are unequal in a different way from those of the species allied to *A. rufipes* and *A. contaminatus*, the great majority being short, with a long one only at distant intervals.

16 (B). **Aphodius ——?**

Hab. MEXICO, Omilteme in Guerrero (*H. H. Smith*).

A single specimen, discoloured; extremely near *A. euprosopus*.

17. **Aphodius opisthius.**

Aphodius duplex, anteà p. 87.

Aphodius opisthius, anteà p. 92, note.

24. **Aphodius larreæ.** (*A. bifrons*, Tab. VI. fig. 20.)

Aphodius larreæ, Horn, Trans. Am. Ent. Soc. xiv. p. 41 (February 1887) [1].

Aphodius bifrons, anteà p. 90 (September 1887).

To the localities given, add :—NORTH AMERICA, El Paso, Texas [1].

Dr. Horn recognized our *A. bifrons*, the types of which he saw on a recent visit to England, as his *A. larreæ*.

24 (A). **Aphodius omiltemius.**

A. mexicano et affinibus primo intuitu similis, sed valde differt genis haud productis. Paullo brevior, postice leviter dilatatus, piceo-niger, capitis thoracisque limbis, antennis, palpis et pedibus testaceo-rufis; caput inerme, vix perspicue punctulatum; clypeus semicircularis limbo explanato, margine antico obtusissime truncato, prope genas nullo modo sinuato, his subacutis sed haud productis; thorax transversim quadratus, a basi ad apicem subrecte et mediocriter angustatus, lateribus late biimpressis punctulatis, disco fere lævi, basi immarginata utrinque versus angulos posticos obtusos sed distinctos obliquata; elytra subsericeo-nitentia, sat profunde striata, striis parum conspicue punctulatis, interstitiis convexis; tibiæ posticæ extus carinis longe setosis, apice valde inæqualiter setosæ; tarsi elongati, graciles.

Long. 5 millim. ♀.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The two examples appear to be females, and all the claws are simple. *A. omiltemius* resembles the species of the *A. mexicanus* group in so many features that it ought probably to be placed in it. It lacks, however, what von Harold considered

an essential character, viz. the produced and acute genæ. But the character is not always strongly pronounced, and is very slight, for instance, in *A. villosipes*.

SAPROSITES (p. 92).

Saprosites parallelus (p. 93).

To the localities given, add:—GUATEMALA, Coban in Vera Paz (*Conradt*).

EUPARIA (p. 93).

2. **Euparia castanea?**

Euparia castanea, Serville, Encycl. Méth. x. p. 357; Horn, Trans. Am. Ent. Soc. xiv. p. 87[1]?

Hab. NORTH AMERICA, Florida, Louisiana [1].—MEXICO, Teapa in Tabasco (*H. H. Smith*).

I refer the single example from Teapa to *E. castanea* with some reserve, Serville's species being known to me only by description. Our insect agrees, however, in form, punctuation, and colour with the careful description of Dr. Horn above cited. In the Southern States, according to Dr. Horn, *E. castanea* is found in the nests of a small ant.

ATÆNIUS (p. 94).

Atænius imbricatus (p. 99).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Panzos (*Conradt*).

15 (A). **Atænius steinheili.**

Atænius Steinheili, Harold, Col. Hefte, xii. p. 18[1].

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).—SOUTH AMERICA, Colombia [1].

Four examples agreeing well with the detailed description above cited, excepting that I am unable to detect the "spinula accessoria" near the apical spurs of the hind tibiæ, which is probably a variable character and perceptible only in well-preserved individuals. The outer apical angles of the same tibiæ are prolonged and acute. The sculpture of the elytra is similar to that of *A. complicatus*, from which the present species is readily distinguished by its smaller size (4 millim.) and by the short but sharp tooth on each side of the emargination of the clypeus. The carinæ of the elytra, eight in number on each side, are narrow from the base to the apex, each being accompanied by a less elevated and more or less crenulated line on each side, and the punctures of the broad striæ are large and strung closely together.

Atænius carinator (p. 101).

To the localities given, add:—MEXICO, Teapa (*H. H. Smith*).

Two examples resembling in form and sculpture the Panama specimens which I referred (*anteà* p. 101) to *A. carinator*, Har. They are larger ($3\frac{1}{4}$ millim.) and therefore accord better with Harold's description.

Atænius abditus (p. 101).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*).

OCHODÆUS (p. 105).

Ochodæus luridus (p. 106).

The example from the Sallé collection referred to this species is probably distinct. Mr. H. H. Smith obtained at Omilteme in Guerrero four specimens of an insect which agrees much more closely with Westwood's description; these all have the short frontal carina between the eyes, this carina being more or less depressed in the middle and nearly separated into two transverse tubercles. The sculpture also agrees with the description. The peculiar form of the left mandible described and figured by Westwood, viz. bidentate at the apex and not sharply pointed as in both mandibles of all other species of *Ochodæus*, is certainly not shown in our examples; but I think it is clear that this is a mutilation, the figure on being regarded attentively evidently representing a mandible in which the tip is broken off. The anterior tibiæ are unarmed at the inner apex in all the specimens.

The two species will therefore stand thus:—

1. **Ochodæus luridus.**

Ochodæus luridus, Westw. Trans. Ent. Soc. Lond. n. s. ii. p. 67, t. 9. fig. 4[1].

Hab. MEXICO[1], Omilteme in Guerrero (*H. H. Smith*); GUATEMALA, Tepan (*Conradt*).

The single example from Tepan differs in the less densely punctured thorax and in the clypeus being slightly produced and thickened in the middle; it is probably the male.

1 (A). **Ochodæus ——?**

Hab. MEXICO (*Sallé*).

7. **Ochodæus ——?**

Hab. MEXICO, Amula in Guerrero (*H. H. Smith*).

A single example; indeterminable.

BOLBOCERAS (p. 111).

Bolboceras sallæi (p. 111).

To the Mexican localities given, add:—Amula in Guerrero 6000 feet (*H. H. Smith*).

Bolboceras arcuatus (p. 111).

The males described are of somewhat minor development, two examples since received being larger and having a more prominent thoracic armature.

♂ major. Thorax antice medio subverticalis utrinque profunde retusus, supra sat valde quadridentatus. Long. 12 millim.

To the localities given, add:—Mexico, Tepetlapa and Amula in Guerrero 6000 feet (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); Guatemala, Tepan and Chimaltenango (*Conradt*).

The male major is from Tepan.

GEOTRUPES (p. 112).

Geotrupes viridi-obscurus (p. 113).

To the Mexican localities given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

A black male example from Omilteme, apparently of major development, differs from all the numerous other specimens of the same sex examined, in the apical tooth of the anterior tibiæ being not only dilated but bifid, with the outer prong not on the same level as the inner; beneath, the same tibiæ have only one instead of two teeth.

TROX (p. 116).

Trox punctatus (p. 116).

To the localities given, add:—Guatemala, Escuintla (*Conradt*).

Trox suberosus (p. 117).

To the localities given, add:—Mexico, Temax in North Yucatan (*Gaumer*); British Honduras, Cayo (*Blancaneaux*); Guatemala, Chimaltenango (*Conradt*).

9. **Trox** —— ?

Hab. Mexico, Amula in Guerrero (*H. H. Smith*).

A single example, closely allied to, if not the same species as, *T. terrestris*, Say.

CLŒOTUS (p. 118).

Clœotus aphodioides (p. 120).

Var. *prionomus*.

To the locality given, add:—Mexico, Temax in North Yucatan (*Gaumer*).

Clœotus nasutus (p. 124).

Two examples taken by Mr. Godman at Atlixco, on his visit to Mexico last year, are a little larger (4 millim.) than the type, and show a more distinctly bidentate clypeus.

CHNAUNANTHUS (p. 130).

Chnaunanthus discolor (p. 130).

To the Mexican localities given, add:—Amula in Guerrero 6000 feet (*H. H. Smith*).

HOPLIA (p. 130).

Hoplia cretacea (p. 132).

To the Mexican localities given, add:—Atoyac in Vera Cruz and Teapa in Tabasco (*H. H. Smith*).

FAULA (p. 136).

Faula pilatei (p. 136).

To the localities given, add:—British Honduras, Cayo (*Blancaneaux*).

Faula mexicana (p. 137).

To the localities given, add:—Mexico, Teapa in Tabasco (*H. H. Smith*); Guatemala, Coban in Vera Paz (*Conradt*).

Found in profusion at Teapa by Mr. Smith in April 1888.

MACRODACTYLUS (p. 138).

Macrodactylus rufescens (p. 145).

To the localities given, add:—Mexico, Omilteme 8000 feet and Xautipa in Guerrero (*H. H. Smith*).

DIPLOTAXIS (p. 157).

Diplotaxis pilifera (p. 157).

To the Mexican locality given, add:—Puente de Ixtla 3500 feet in Morelos (*H. H. Smith*).

2 (A). **Diplotaxis** (?) —— ?

Hab. Mexico, Jalapa (*M. Trujillo*).

A single example, apparently belonging to this genus.

Diplotaxis ænea (p. 158).

To the Mexican localities given, add:—Chilpancingo 4600 feet, Tepetlapa 3000 feet, Amula 6000 feet, and Mescala, all in Guerrero (*H. H. Smith*).

These examples are smaller (6–7 millim.) than those from Central Mexico, and the anterior tarsi in the male have a scarcely perceptible fringe of very short hairs beneath.

Diplotaxis trapezifera (p. 159).

Var. 1. *D. consentanea.*

To the Mexican localities given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Var. 4. *D. denigrata.* A *D. trapezifera* forma typica differt colore fuligineo-nigro interdum castaneo-nigro; clypeo breviter trapezoideo lateribus subrectis.
Long. 7–9 millim.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

Many examples, offering very little variation. The clypeus is perceptibly a little shorter than in the typical *D. trapezifera*; form, sculpture, and dentition of claws offer no difference.

6 (A). **Diplotaxis ——?**

Hab. Mexico, Xucumanatlan (*H. H. Smith*).

A single example; indeterminable.

6 (B). **Diplotaxis ——?**

Hab. Mexico, Puente de Ixtla in Morelos (*H. H. Smith*).

A single example.

Diplotaxis sinuaticeps (p. 162).

To the localities given, add:—Mexico, Temax in North Yucatan (*Gaumer*); Guatemala, La Tinta in Vera Paz (*Conradt*).

14 (A). **Diplotaxis lævivertex.**

Sat graciliter oblonga, nitida, glabra, rufo-testacea interdum supra fusco-ænea; caput sat breve et latum, vertice convexo, lævi, lateribus tantum sparse punctatis, clypeo brevi, latissime trapezoideo, angulis rotundatis sed distinctis, margine antico breviter reflexo, parum sinuato, discrete punctato, sutura frontali haud impressa fronteque plana parce punctata; thorax quadratus, medio perparum rotundato-dilatatus nullo modo angulatus, toto subgrosse irregulariter spatiose punctatus, lateribus vage foveatis; elytra striis punctatis geminatis duabus, interstitiis pluripunctatis, lateribus punctato-striatis. Pygidium (♂ et ♀?) in hoc genere magnum, fere læve, grosse bicallosum. Ungues fere æqualiter et profunde bifidi.
Long. 7–8 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Several examples.

14 (B). **Diplotaxis cribriceps.**

Ovata, postice ampliata, nigro-picea, minus nitida, supra dense et sat grosse annulato-punctata; antennis palpisque pallide rufo-testaceis; clypeus brevis, trapezoidalis, lateribus fere rectis, margine antico paullo reflexo parum sinuato, sutura frontali vix distincte impressa; thorax versus angulos posticos rotundato-dilatatus, deinde ad angulum lateribus sinuatis, areola angusta, disci solum lævi, basi valde marginata; elytra glabra, striis punctatis geminatis plus minusve distinctis. Subtus et pedes nitida, grosse distanter punctata. Ungues dente inferiore magis curvato. Pygidium parvum, politum, discrete grosse annulato-punctatum.
Long. 8–9 millim.

Hab. MEXICO, Tepetlapa in Guerrero (*H. H. Smith*), Cuernavaca (*Höge*).

Three examples.

14 (C). **Diplotaxis carinifrons.**

Ovata, ænescenti- vel viridescenti-fusca, glabra, antennis, palpis et pedibus rufo-testaceis; caput dense confluenter punctatum, clypeo breviter trapezoidali, lateribus et apice sinuatis, fronte transversim crasse carinata, carina medio interrupta punctata; thorax post medium valde dilatatus, margine laterali post dilatationem recto, angulis posticis obtusis, supra dense (lateribus scabrose) punctatus, basi sulcato-marginata; elytra æqualiter dense punctulata, striis geminatis parum distinctis.
Long. 9 millim.

Hab. GUATEMALA, Capetillo (*Rodriguez*), Panzos in Vera Paz (*Conradt*).

Two examples only were obtained of this species, recognizable by the transverse ridges of the forehead situated close above the frontal suture.

23 (A). **Diplotaxis alutacea.** (Tab. XXIV. fig. 12.)

Oblongo-ovata, postice dilatata, castaneo-fusca, minus nitida, glabra, antennis palpisque rufo-testaceis; caput crebre punctatum, interstitiis reticulatim elevatis, interdum scabrosum, clypeo parvo, breviter trapezoidale; thorax latus et brevis, medio valde dilatatus ibique lateribus fere lobatis, ante et post dilatationem sinuatis, angulis posticis rectis, supra antice et postice transversim depressus, creberrime confluenter punctatus, antice et postice medio juxta marginem area polita, basi immarginata; elytra dense sed subtiliter punctulato-strigulosa, striis geminatis et lateralibus parum distinctis. Pygidium grossissime confluenter punctatum.
Long. 10 millim.

Hab. GUATEMALA, Capetillo (*Rodriguez*), Coban in Vera Paz (*Conradt*).

Several examples.

23 (B). **Diplotaxis aurata.** (Tab. XXIV. fig. 13.)

Oblonga, fusco-viridis, aurescens, pedibus rufescentibus metallicis, antennis palpisque pallidis; caput crebre punctatum, clypeo brevi et lato, angulis late rotundatis, margine reflexo antice sinuato; thorax medio subangulatim dilatatus, angulis posticis obtusis sed distinctis, basi subtiliter marginata, supra toto crebre sat grosse punctatus; elytra seriatim fulvo-pilosa, grosse rugulosa et subtiliter spatiose et irregulariter punctata. Pygidium parvum, grossissime punctatum, longe setosum. Ungues dente inferiore latiore et breviore.
Long. 10 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Conradt*).

A single example only has been received of this distinct and easily recognizable species.

Diplotaxis hebes (p. 164).

To the Mexican localities given, add:—Santa Clara in Chihuahua (*Höge*).

25 (A). **Diplotaxis ——?**

Hab. GUATEMALA, Capetillo (*Rodriguez*).

A single example of a doubtful species.

25 (B). **Diplotaxis cribratella.**

Oblonga, ænescenti-fusca, glabra; caput crebre punctatum, clypeo brevissimo antice obtuse truncato subsinuato, lateribus valde obliquis, fronte medio retusa; thorax medio perparum dilatatus, grosse et crebre hic illic confluenter punctatus, basi immarginata, angulis posticis obtusis sed distinctis; elytra striis geminatis striisque lateralibus et suturali distinctis cum interstitiis sat grosse punctatis. Subtus cum pygidio parva, crebre punctata.

Long. 8 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Two examples. This species is extremely near *D. hebes*, but differs especially in the form and sculpture of the thorax, which in *D. hebes* is rather strongly dilated much behind the middle and is sparsely punctured on the disc.

CHLÆNOBIA (p. 166).

7. **Chlænobia unituberculata.**

Anguste elongata, flavo-testacea, supra discrete (capite grossius) punctulata, thorace medio subangulatim dilatato, angulis posticis rectis, elytris utrinque costulis duabus sublævibus.

♂. Tarsi subtus dense pilosi, antici vix perspicue dilatati. Pygidium mediocriter æqualiter convexum, sparse punctatum, glabrum, margine apicali valde reflexo. Venter medio glaber, sparsissime punctulatus, segmento apicali medio fovea rotunda lævi.

♀. Tarsi nec elongati nec dilatati, subtus mediocriter pilosi. Pygidium vix punctatum, medio tuberculo unico conspicuo lævi, margine apicali valde reflexo. Ventris segmentum apicale convexum integrum.

Long. 14–16 millim.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

Seven examples.

8. **Chlænobia rodriguezi.**

A *C. tumulosa* ♂ ♀ differt corpore toto densius et fortius punctato, vix nitido; thorace medio angulatim dilatato, feminaque valde discrepat pygidio haud profunde concavo etc.

♀. Tarsi sicut in *C. tumulosa* subtus dense pilosi. Pygidium grosse punctatum, mediocriter convexum, prope apicem fovea elongata parum profunda, margine apicali reflexo simplici. Ventris segmenta 2^{m}–5^{m} dense punctulato-pilosa, 6° polito, margine apicali medio dentiformiter producto.

Long. 14–15 millim.

Hab. GUATEMALA, Capetillo (*Rodriguez*).

Three examples, all females.

PHYTALUS (p. 174).

In the characters of Section I. b, at p. 177, with regard to the lower spur of the hind tibiæ being connate, the words "*in the male*" were inadvertently omitted. The same omission occurs under *Lachnosterna* at p. 196.

Phytalus (?) pubicollis (p. 176).

To the locality given, add:—GUATEMALA, Coban in Vera Paz (*Conradt*).

The species is rather small (15 millim.) and slender, oblong, tawny-castaneous and shining, though clothed throughout somewhat densely with short suberect ashy pile. The elytra are closely and finely punctured, with undulating wrinkles, and without costæ or striæ, the head and thorax being more distantly, and the pygidium more coarsely and sparsely punctulated, the latter with coarser rugæ. In the male the tarsal claws have the teeth rather close together, though the lower tooth is much broader and more curvate-deflexed, a character which induced me to query the position of the species in the genus *Phytalus*. The female taken by Conradt differs from the male in the dentition of the claws, the lower tooth being nearly as narrow and sharp as the apical one, and more bent and apparently situated lower down the claw. This form of dentition is entirely foreign to the *Phytalus* group, and the species should be removed to *Lachnosterna*. The pygidium in the female is scarcely convex and slightly prolonged, flattened and smooth at the apex.

Phytalus cometes (p. 177).

To the localities given, add:—GUATEMALA, Coban in Vera Paz (*Conradt*).

Phytalus bolacoides (p. 182).

To the Mexican locality given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Mr. H. H. Smith obtained on his recent journey several examples of both sexes of this curious little species. In none of them is the triangular circumscutellar spot so dark and conspicuous as in the unique type specimen (♀), being at most indicated by a slightly browner tint in that part of the otherwise tawny-yellow elytra, neither are the elytra in the female so widely dilated behind. In some, apparently immature, examples the head and thorax are testaceous-red, in others they are brownish-black as described.

♂. Anguste oblongus, postice paullo dilatatus. Pygidium punctatum, glabrum, basi convexum, apice planatum. Venter sparse punctulatus, nitidus, segmento 5° medio apice retuso, 6° transversim valde concavo antice medio tuberculo compresso setifero. Antennarum clava triphylla, gracilis, articulis 2°–7^{m} conjunctis æqualis.

25 (A). **Phytalus omiltemius.** (Tab. XXIV. fig. 14, ♂.)

P. fissilabri proxime affinis et simillimus; differt corpore supra densius et subtilius punctato, oculis (♂ ♀) minoribus et minus convexis, et clypeo minus concavo antice minus profunde sinuato lateribusque oblique

convergentibus (nec subparallelis). Antennæ 9-articulatæ; clava ♂ gracilis, cæteris articulis conjunctis subæqualis.

Long. 11–12 millim. ♂ ♀.

Hab. MEXICO, Omilteme in Guerrero 8000 feet, Chilpancingo 4600 feet (*H. H. Smith*).

The similarity in form and coloration—chestnut-brown, with broad lateral (marginal) thoracic vitta testaceous-yellow—and, especially, the very similar sexual characters in the pygidium and abdomen, render it doubtful if this is a distinct species from *P. fissilabris*. But the difference in the volume and convexity of the eyes, and the flatter, broader, and less sharply sinuated clypeus being constant in the large series of specimens taken at Omilteme, and confirmed by the much closer and finer sculpture, I consider it necessary to treat them as a separate specific form.

LACHNOSTERNA (p. 185).

2 (A). **Lachnosterna baroni.** (Tab. XXIV. fig. 15, ♂.)

L. heteronychæ proxime affinis, sed magis elongata fulvo-pubescens et corpore supra longe fulvo-piloso, pectore fulvo-villoso; caput magnum, grosse scabroso-punctatum, vertice lævi fronteque subito declivi, clypeo subsemicirculari apice obtuse truncato et sinuato, margine paullo reflexo; thorax medio sat valde vix angulatim dilatatus, angulis posticis obtusis, dense sed discrete punctulatus, margine basali medio longe fulvo-penicillato; elytra dense sat subtiliter punctulata, striis punctatis nullis; ungues dente inferiore lato apud medium denteque basali proximo lato vix breviore.

♂. Pygidium amplum, convexum, setifero-punctulatum. Venter medio depressus, sat dense setifero-punctulatus; segmento 6° subdepresso, densius et longius setoso. Antennæ 10-articulatæ, clava gracili articulis 1^{o}–7^{m} conjunctis paullo longiore, articulis 3^{o}–5^{m} parum elongatis intus convexis, 6° et 7° intus acute productis.

♀. Pygidium paullo elongatum, apice convexum, setifero-punctulatum. Venter convexus, sat dense setifero-punctulatus, segmento 6° convexiore et grossius punctato. Antennæ sicut in ♂ sed clava parva.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*), Mochitlan in Guerrero (*Baron*).

Mr. Smith obtained one example only, a well-preserved male. The female is also described from a single somewhat abraded specimen sent by Mr. Harford from Baron's collection.

4 (A). **Lachnosterna rostripyga.** (Tab. XXIV. fig. 16, ♂.)

L. piceolæ quoad formam et sculpturam simillima, colore differt solum corpore toto rufo-castaneo. Caput grossissime subalveolato-punctatum, vertice lævi, fronte abrupte declivi, longe pilosa, clypeo utrinque rotundato, margine paullulum reflexo antice medio sat fortiter sinuato; thorax medio sublobatim dilatatus, margine laterali distanter crenato et setifero, post dilatationem sinuato, angulis posticis rectis, grosse spatiose punctatus punctis minoribus intermixtis; elytra punctulata, versus suturam antice subtiliter rugulosa, postice læviora parce longe pilosa; pectus fulvo-pilosus. Ungues latius quam in *L. piceola* fissi, dente inferiore latiore, apice oblique truncato, dente basali brevissimo et obtusissimo.

♂. Pygidium mediocriter convexum, grossissime hic illic spatiose punctatum, glabrum. Venter medio convexus lævissimus, segmento 5° apice medio depresso setifero-punctulato, 6° sat elongato, medio transversim concavo et grossius punctato.

♀. Pygidium grosse punctatum, medio apice tuberculo magno paullo recurvato. Venter medio convexus lævissimus, segmento 5° piloso-punctulato, 6° fere plano, sparse punctato.
Long. 16–18 millim.

Hab. Guatemala, Chimaltenango (*Conradt*).

Many examples of both sexes.

Lachnosterna leonina (p. 188).

To the Mexican localities given, add:—Omilteme in Guerrero (*H. H. Smith*).

Numerous examples, including both sexes.

12 (a). **Lachnosterna crinipennis.** (Tab. XXIV. fig. 17, ♀.)

Elongato-oblonga, rufo-castanea, capite thoraceque interdum obscurioribus; caput grosse confluenter punctatum, vertice lævi, fronte subito declivi, erecte pilosa, clypeo utrinque rotundato margine breviter reflexo, antico medio emarginato subinciso; thorax medio angulatim valde dilatatus, margine laterali setis longis instructo, post dilatationem recto angulis posticis obtusis, toto grosse punctatus, interstitiis punctorum hic illic elevatis vermiculatis; elytra elongata, haud profunde punctato-rugulosa, nitida, toto seriatim erecte et longe fulvo-pilosa, striis geminatis sat vage, suturali profunde, impressis; pectus griseo-villosus. Ungues dente inferiore breviore exstanti curvato acuto apud medium sito, dente basali lato parum elevato.
♀. Pygidium mediocriter convexum, glabrum, punctatum, apicem versus late concavum. Venter medio politus, parum punctulatus, segmentis 5° et 6° medio grosse setifero-punctatis.
♂. Ignotus.
Long. 21–23 millim.

Hab. Mexico, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The following nine species are represented by single examples only, in some cases in mutilated condition, and in others doubtful as to sex:—

12 (b). **Lachnosterna ——?**

Hab. Mexico, Chilpancingo in Guerrero (*H. H. Smith*).

12 (c). **Lachnosterna ——?**

Hab. Guatemala, Tepan (*Conradt*).

12 (d). **Lachnosterna ——?**

Hab. Mexico, Xautipa in Guerrero (*H. H. Smith*).

12 (e). **Lachnosterna ——?**

Hab. Mexico, Xautipa in Guerrero (*H. H. Smith*).

12 (f). **Lachnosterna ——?**

Hab. British Honduras, Cayo (*Blancaneaux*).

12 (G). **Lachnosterna ——?**

Hab. GUATEMALA, Tepan (*Conradt*).

12 (H). **Lachnosterna ——?**

Hab. GUATEMALA, Chimaltenango (*Conradt*).

12 (I). **Lachnosterna ——?**

Hab. GUATEMALA, Tepan (*Conradt*).

12 (J). **Lachnosterna ——?**

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

22 (A). **Lachnosterna godmani.** (Tab. XXIV. fig. 18, ♂.)

Elongato-ovata, fulvo-castanea, nitida, fronte et thorace antice erecte fulvo-pilosis; capite aspere confluenter punctato, clypeo discretius punctato, brevi, utrinque mediocriter rotundato, margine reflexo antice medio sinuato; thorax medio subangulatim dilatatus, margine ante et post dilatationem leviter sinuato, angulis anticis et posticis subrectis, disperse mediocriter punctatus, medio basi aureo-fulvo-penicillatus; elytra subtiliter plerumque discrete punctata; pectus aureo-fulvo-villosus. Ungues dente inferiore infra medium sito brevi acuto basin versus inclinato, dente basali parvo rotundato.

♂. Antennarum clava valde elongata, hexaphylla, articulo 1° laminato cæteris fere dimidio breviore. Pygidium convexum, setifero-punctatum. Venter medio late depressus, setifero-punctulatus; segmento 5° plaga magna nigro-sericea, densissime breviter imbricato-setoso, 6° plano, grosse aspere setifero-punctato medio canaliculato. Ungues intermedii haud difformes.

Long. 20 millim. ♂.

Hab. MEXICO, Misantla (*F. D. G.*).

We have two examples of this elegant and distinct species, both males. In the dentition of the claws it agrees rather better with the species of Section V. than with those of Section II.; but it seems preferable to leave it at the end of the latter section in the vicinity of the two polyphyllous species there located.

Lachnosterna rorulenta (p. 196).

To the localities given, add:—MEXICO, La Venta in Guerrero, Teapa in Tabasco (*H. H. Smith*).

Lachnosterna parvisetis (p. 196).

Among the numerous examples of *L. rorulenta* taken by Mr. H. H. Smith are some in which many of the elytral punctures have a short seta. As the occurrence of these setæ (not the long loose hairs with which the elytra are provided towards the apex, and which are often seen also in *L. rorulenta*) furnishes the sole character of the present species, it must be withdrawn and treated as a slight variety of *L. rorulenta*. The pygidium in the female is impressed and bituberculated at the apex as in *L. rorulenta*; in the following very closely-allied species the form of the pygidium is very different.

25 (A). **Lachnosterna parilis.**

L. rorulentæ affinissima et similis, differt corpore magis elongato et supra crebrius et profundius punctato, minime pruinoso.

♂. Pygidium, calcaria postica et venter sicut in *L. rorulenta* ♂.

♀. Pygidium sicut in ♂ subconvexum, integrum, glabrum, distanter punctatum. Venter sicut in *L. rorulenta* ♀.

Long. 23–25 millim.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

Three males and one female.

26 (A). **Lachnosterna gaumeri.**

Elongato-oblonga, sat gracilis, fulvo-testacea, supra glabra; caput sat latum, discrete punctatum, clypeo brevi utrinque rotundato, margine mediocriter reflexo antice medio sinuato; thorax medio rotundato-dilatatus, angulis anticis et posticis obtusis sed distinctis, regulariter et distanter punctatus; elytra mediocriter punctata, costa suturali valida sed prope scutellum obsoleta. Subtus pectus longius tenuiter pubescens.

♂. Pygidium parum convexum, distanter punctatum, punctis breviter piliferis. Venter medio concavus, sparsim subtiliter setifero-punctatus, segmento 5° elongato, simplici, 6° fere plano apice punctato et longe setoso. Tibiæ posticæ calcari inferiore brevi connato. Ungues dente inferiore brevi acuto infra medium sito, dente basali rotundato parum elevato. Antennarum clava brevis.

♀. Pygidium elongato-triangulare, parum convexum, distanter punctatum, punctis breviter piliferis. Venter convexus, segmento 6° valde convexo et grosse setifero-punctato. Tibiæ posticæ calcari inferiore normali articulato. Ungues dente inferiore longiore (apicali paullo tantum breviore) et supra medium sito.

Long. 15–17 millim.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

Eight examples. The sexual difference in the dentition of the claws is greater than in any other species of *Lachnosterna* I have examined, the lower tooth being very curved and situated above the middle in the female, whilst it is short and straight, and placed nearer the base than the middle, in the male. The species is also remarkable in Section IV. for its elongate, slender form.

Lachnosterna submetallica (p. 204).

To the localities given, add:—MEXICO, Atoyac (*Flohr*).

57 (A). **Lachnosterna yucateca.**

L. tristi (Fabr.) proxime affinis et quoad elytrorum sculpturam simillima, sed differt *inter alia* thorace sparsius et rigidius piloso. Fulvo-castanea, capite et thorace rufioribus interdum fere nigris; clypeus subsemicircularis, margine toto alte reflexo, punctato, fronte scabrosa; thorax post medium valde dilatatus, margine (grosse crenulato) laterali antice sinuato, angulis anticis acutis, posticis obtusis, sat grosse et dense punctatus, erecte rigide pilosus; elytra glabra, subæqualiter crebre et forte punctulata medio suturam versus rugulosa. Ungues dente inferiore infra medium sito, sat robusto, brevi, acuto, dente basali nullo.

♂. Pygidium mediocriter convexum, grosse punctatum, pilis erectis valde elongatis. Venter medio sublævis politus, segmento 5° postice medio crebre setifero-punctato, 6° transversim concavo, punctato et longius piloso.

Long. 13–14 millim. ♂.

Hab. MEXICO, Temax in North Yucatan (*Gaumer*).

Six examples, all males.

57 (B). **Lachnosterna crinita.**

Trichestes crinita, Burm. Handb. der Ent. iv. 2, p. 359[1].
Lachnosterna crinita, Horn, Trans. Am. Ent. Soc. iv. p. 286 (1887)[2].
Lachnosterna glabripennis, Leconte, Journ. Ac. Phil. 1856, p. 260.

Hab. NORTH AMERICA, Texas [1 2].—MEXICO [1 2].

Judging from the descriptions this species must be very closely allied to *L. integra* if it be not really the same.

Lachnosterna anodentata (p. 208).

To the Mexican localities given, add:—Puente de Ixtla in Morelos (*H. H. Smith*).

This species is closely allied to the recently described *L. lenis*, Horn, from Arizona; but it is clearly distinct, the clypeus being semicircular, not broad and subquadrate, and the elytra having very short pubescence.

EUGASTRA (p. 214).

1. **Eugastra** —— ?

Eugastra cribrosa, anteà p. 214, Tab. XI. fig. 21.

According to Dr. Horn, who has examined the unique specimen, our Mexican insect is not the *E. cribrosa* of Leconte; it is not advisable, however, to name it.

ANOMALA (p. 217).

Anomala undulata (p. 217).

To the localities given, add:—GUATEMALA, Chimaltenango, Escuintla, Panzos, Coban (*Conradt*).

Anomala millepora (p. 231).

To the locality given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*).

49 (A). **Anomala conradti.**

Ovata, glabra, nigro-viridi-ænea, elytris maculis oblongis flavis interdum in fascias duas valde irregulares (1ª basali, 2ª paullo post medium) digestis, sed variat fulvo-testacea æneo-metallica, vertice et interdum plagis duabus thoracis nigro-æneis; clypeus subsemicircularis, dense ruguloso-punctatus, vertice discrete punctulato; thorax transversus, basi (marginato sulculo medio interrupto) utrinque conspicue arcuatim sinuata, angulis posticis rectis, lateribus a basi usque ante medium parallelis deinde ad angulos anticos acutos convergentibus, subtiliter spatiose punctulatus, intra marginem lateralem seriatim pilifero-punctulatus; elytra sat profunde punctato-striata, interstitiis convexis sparsim punctulatis, stria 2ª basin versus irregulariter duplicata ibique interstitiis 1° et 2° planioribus. Tibiæ posticæ fere rectæ. Mesosternum inter

coxas angustum et anguste declivi-carinatum. ♂. Tarsi antici ungue majore lato robusto deflexo, dente superiore brevi et tenui vix abbreviato; articulo unguiculari robusto, infra profunde sinuato.

Long. 11–13 millim. ♂ ♀.

Hab. GUATEMALA, Coban and La Tinta in Vera Paz (*Conradt*).

Several examples.

68 (A). **Anomala smithi.**

A. cupricollis individuis minoribus similis, sed differt corpore supra densius et subtilius punctato, vix nitido. Fusco-æneus, elytris fulvo-testaceis disco interdum grosse fusco-maculatis. Caput densissime confluenter punctulatum, opacum; clypeo minus quadrato, angulis magis rotundatis; thorax et scutellum dense sed plerumque discrete punctulati, subnitidi; elytra subtiliter et densissime confluenter punctulata, utrinque striis geminatis tribus grosse et irregulariter punctatis, stria suturali apicem versus solum impressa. Mesosternum apice (juxta metasternum) vix incrassatum. Pygidium densissime subtiliter scabroso-punctulatum, opacum. ♂. Ungues antici profunde fissi, dente superiore tenuiore, haud breviore, articulo unguiculari subtus acute sinuato.

Long. 16–18 millim. ♂.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Four examples, all males.

The two unnamed *Anomalæ*, Nos. 45 and 104, from Playa Vicente, are possibly females of this species; but their mutilated condition, especially the absence of anterior and intermediate tarsi, renders their determination doubtful. They are more oblong in form and somewhat smaller than the four examples above described.

Anomala nitidula (p. 246).

The following beautiful colour-variety is to be added:—

Var. *a. escuintlensis.* Rufo-cuprea, thorace vitta marginali albo-testacea, elytris cuprascenti-fulvis.

Hab. GUATEMALA, Escuintla (*Conradt*).

One male example only.

Anomala vidua (p. 247).

The following is an interesting local modification:—

Var. *A. crassesculpta.*—Caput densissime minute scabroso-punctatum, vertice læviore; thorax grosse spatiose punctatus; elytra utrinque costis tribus elevatis, interstitiis sat grosse punctatis. ♂. Rufus, thorace vitta lata (interdum in duas divisa) elytrisque nigris; ♀ dilutius rufa, elytris flavo-testaceis, thorace maculis discoidalibus duabus nigris. Pedes utroque sexu rufo-testacei tarsis semper concoloribus.

Hab. GUATEMALA, Chimaltenango (*Conradt*).

It will be seen that the modification relates chiefly to the sculpture, the only colour-difference being that the tarsi in the variety are pale in both sexes and black (at least in all the examples before me) in the Mexican *A. vidua*: an analogous difference in the form and colour of the sexes is presented by both type form and variety.

EPECTINASPIS (p. 250).

5 (A). **Epectinaspis chalconota.**

Oblonga, viridi- vel cupreo-ænea interdum ænescenti-rufa, supra polita, glabra, elytris nigro-æneis, ænescenti-castaneis vel flavo-testaceis æneo-nitentibus interdum fusco- vel rufo-plagiatis; caput medio depressum, densissime minute scabrosum; thorax convexus, discrete punctatus; elytra fortiter punctato-striata, striis 2ª et 7ª basin versus diffusis, multipunctatis, margine laterali medio (♂ ♀) paullo incrassato. Pygidium densissime confuse strigulosum, longe griseo-pubescens.

♂. Clypeus magnus angulis rotundatis, margine alte elevato. Tarsi antici ungue majore deflexo, lato, dente superiore tenuissimo paullo breviore; articulo unguiculari subtus valde sinuato.

♀. Clypeus minor et minus quadratus, margine vix elevato. Tarsi antici ungue majore gracili fisso.

Long. 8–10 millim.

Hab. GUATEMALA, Chimaltenango 6000 feet (*Conradt*).

A good series of examples.

STRIGODERMA (p. 252).

Strigoderma sallæi (p. 255).

To the Mexican localities given, add:—Chilpancingo 4000 feet, and Xucumanatlan 7000 feet, in Guerrero (*H. H. Smith*).

Strigoderma teapensis (p. 258).

Several examples were taken by Mr. H. H. Smith, also at Teapa, among them a colour-variety, in which the head and thorax are testaceous-red tinged with green, the lateral pale thoracic vitta margined with a brassy-green line, the elytra wholly pale testaceous with a slight brassy lustre, and the femora and tibiæ rufo-testaceous tinged with coppery.

15 (A). **Strigoderma presidii.**

S. teapensi similis, sat breviter quadrato-ovata, fusco-ænea, nitida, elytris pallide fuscis margine laterali apicalique strigaque submarginali nigricantibus; fronte, thorace et pygidio erecte griseo-pilosis, corpore subtus pedibusque sparsius griseo-pilosis; caput densissime confluenter punctulatum, clypeo subsemicirculari, lateribus fere parallelis; thorax dense sed discrete punctulatus, æqualiter convexus, basi marginatus, paullo ante medium dilatatus; scutellum punctatum; elytra dorso paullo planata, conspicue et regulariter punctato-striata, inter suturam et humerum striis septem, interstitiis angustis haud elevatis. Pygidium politum, sparse punctatum. Mesosternum tuberculo valido minime porrecto. Epimera mesosternalia margine acuto vix elevato.

Long. 8 millim. ♂.

Hab. MEXICO, Presidio near Mazatlan (*Forrer*).

The mesosternal epimera do not rise nearly to the level of the elytral humeri. *S. presidii* according to this character would be an *Anomala*, but it has so close an affinity with *S. teapensis* that its natural place must be next to that species.

DILOPHOCHILA (p. 261).

Dilophochila bolacoides (p. 261).

To the localities given, add :—GUATEMALA, Tepan (*Conradt*).

CHLOROTA (p. 268).

Chlorota cincticollis (p. 269).

To the localities given, add:—GUATEMALA, Coban in Vera Paz (*Conradt*).

RUTELISCA (p. 270).

Rutelisca flohri (p. 270).

To the Mexican localities given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*), Amecameca, Atlapango (*Flohr*).

A few beautifully preserved examples of both sexes.

Mr. Flohr informs me that this interesting Rutelid occurs chiefly under pine-bark, but sometimes under oak-bark.

PELIDNOTA (p. 273).

Pelidnota notata (p. 273).

To the Mexican locality given, add :—Teapa in Tabasco (*H. H. Smith*).

Pelidnota virescens (p. 274).

The type form and var. 1 were both taken in the State of Guerrero by Mr. H. H. Smith, the former at Mescala and Tepetlapa, the latter at Venta de Pelegrino and Tierra Colorada. Also the following new variety:—

Var. 5. Frons et thorax læte saturatius viridi-ænea.

Hab. MEXICO, Tepetlapa in Guerrero (*H. H. Smith*).

One example.

Pelidnota punctulata (p. 276).

According to Mr. Flohr, the locality "Jalapa" given by Herr Höge is a mistake, as the species does not occur there. It is an inhabitant of the "tierra caliente." He has received it from Minatitlan, Atoyac, and Playa Vicente. A dark brassy-brown, nearly black, variety has been received from Conradt taken at Escuintla, Guatemala.

10. **Pelidnota cylindrica.**

Pelidnota cylindrica, Waterh. Trans. Ent. Soc. Lond. 1876, p. 24[1].

Hab. GUATEMALA[1].

A very elongate brassy-green species 16 lines long; not contained in our collections.

PLUSIOTIS (p. 276).

Plusiotis lacordairei (p. 280).

To the Mexican localities given, add:—Omilteme 8000 feet, and Xautipa in Guerrero (*H. H. Smith*).

Plusiotis prasina (p. 282).

To the Mexican localities given, add:—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Plusiotis laniventris (p. 283).

Mr. Flohr states that this species is confined in its range to the "tierra fria." He finds it near the city of Mexico and also at the Hacienda de las Trojes, on the border of the States of Mexico and Michoacan. It feeds on the leaves of the oak and alder.

Plusiotis adelaida (p. 283).

To the localities given, add:—MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

This species also, according to Mr. Flohr, does not occur outside of the "tierra fria" in Mexico. Höge's localities Jalapa and Oaxaca are wrong; his specimens were obtained near Mexico city, Atlapango, and Parada. Mr. Flohr adds as localities, Quecholac, Xololoya, on the slopes of the Cofre de Perote. It feeds on the young shoots of pine-trees.

Plusiotis rodriguezi (p. 283). (Tab. XXIV. fig. 21, var.)

To the localities given, add:—MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

One of Mr. Smith's specimens is a clayey-reddish-tawny variety similar to the corresponding variety of *P. costata* mentioned at p. 282. It differs from that, however, in the sides of the elytra and the under surface having a rich metallic tinge, thus corresponding with the green typical form.

20 (A). **Plusiotis alticola.** (Tab. XXIV. fig. 22.)

P. lecontei proxime affinis, differt præcipue corpore elongato-oblongo supra pallide viridi, capite, scutello, thoracis elytrorumque marginibus argenteis; clypeus sicut in *P. lecontei* parvus, brevis, subsemicircularis, dense

minute scabrosus, auratus, sutura frontali impressa, fronteque utrinque juxta oculum aureo-marginata; thorax conspicue angustior, post dilatationem nullo modo dilatatus angulisque posticis fere rotundatis, subtiliter punctulatus; elytra sicut in *P. lecontei* valde punctato-striata, dorso paullulum planato, callo apicali haud metallico. Pygidium fere læve. Subtus longe, pectore longius et densius, fulvo-villosa. Pedes flavi, æneo-metallici, tarsis rufioribus. ♂? Antennæ quam in *P. lecontei* longiores clavaque cæteris articulis conjunctis longiore, rufæ.

Long. 26 millim.

Hab. Mexico, Sierra Nevada de Colima 11000 feet (*Richardson*).

One example.

20 (b). **Plusiotis orizabæ.** (Tab. XXIV. fig. 24.)

P. lecontei (partim), anteà pp. 283, 284.

P. lecontei affinissima, sed multo major, elytris lætius metallico-nitentibus, etc. Oblonga, robusta, supra pomaceo-viridis, elytris argenteo-viridi tinctis; thorax basin versus minus dilatatus angulisque magis obtusis, margine laterali paullo flexuoso, subtilissime alutaceus et distinctius punctulatus; elytra punctato-striata, interstitiis convexis. Pygidium et propygidium argenteo (subaurato) metallica. Pectus dense fulvo-cinereo-villosus (*P. lecontei* villositate vulpino-rufo). Femora et abdomen sicut in *P. lecontei* argenteo-rosacea, tibiis et tarsis viridi-æneis.

Long. 30 millim.

Hab. Mexico, Suapam, Volcan de Orizaba (*Sallé*).

M. Sallé is of opinion that this species does not belong to *Plusiotis*; but I can see no difference except in the shorter and more semicircular clypeus, which it has in common with *P. lecontei* and *P. alticola*. The base of the labrum is broad and sinuated as it is in *Plusiotis* and the Rutelidæ generally.

The unique example is in a damaged condition and I am not sure that the outline of the thorax has not been distorted. The colour of the dense and long villosity of the breast is the character which chiefly inclines me to think the species is distinct from *P. lecontei*.

CHRYSINA (p. 285).

Chrysina macropus (p. 285).

Var. *mniszechi*.

Mr. Flohr believes that Herr Höge's examples of this variety came, not from Jalapa, but from the neighbourhood of Tepansacualco.

Var. *adolphi*.

To the Mexican localities given, add:—Omilteme 8000 feet, and Xautipa in Guerrero (*H. H. Smith*).

Two females, one male, the latter belonging rather to the var. *mniszechi*; but all gradations between these two forms are now known.

Chrysina amœna (p. 286).

The female example from Ciudad in Durango belongs to the following species, and the locality should therefore be erased.

3. **Chrysina erubescens.** (Tab. XXIV. fig. 23, ♀.)

C. amœnæ affinissima, sed differt corpore paullo majore coloribusque diversis. Supra pallide pomaceo-viridis, fronte et clypeo erubescentibus, scutello thoracisque lateribus leviter rosaceis; subtus differt pectore obscure æneo ventroque dimidio basali argenteo-æneo politissimo dimidio apicali rufo-æneo minus nitido, femoribus tibiisque rufo-testaceis, politis, submetallicis, tibiis apice cærulescentibus, tarsis cyaneis; pygidio lætius carnescenti-lateritio, dense punctulato linea dorsali lævi. Supra sicut in *C. amœna* dense hic illic rugulose punctulatis punctis minutis intermixtis. ♂. Pedes postici parum elongati sed femoribus incrassatis, tibiis rectis latis intus basi subito profunde emarginatis, dentatis.

Long. 40 millim. ♂ ♀.

Hab. Mexico, Ciudad in Durango (*Höge*), Durango city (*Becker*), Sierra de Nayarit (*Richardson*).

Three examples, a male and two females. Our figure is taken from a female from Ciudad.

4. **Chrysina beckeri.**

C. amœnæ proxime affinis et simillima. Differt colore supra cum pygidio paullo dilutius pomaceo-viridi leviter metallico, subtus fulvescenti-viridi pedibusque fuscescenti-cæruleis, tarsis chalybeis. Supra nitidior, sparsius punctulata, interstitiis punctorum absque punctulis minoribus, elytrisque disco subseriatim punctulatis. ♂. Pedes postici crassiores haud longiores, præcipue femoribus dilatato-compressis; trochanteribus apice haud prolongatis.

Long. 36 millim. ♂ ♀.

Hab. Mexico, Canelas in the Sierra Madre de Durango (*Becker*).

A pair of this species has been sent me by Mr. Flohr, who points out its close affinity with *C. amœna*. It differs from *C. amœna* in the sparser punctuation of the upper surface, in which character it is intermediate between *C. amœna* and the more strongly punctured examples of *C. macropus*. It agrees with *C. amœna* in the prominent, though small, mesosternal process, which is narrower and more acute, though much stouter than in *C. erubescens*.

I have named it, at Mr. Flohr's request, after the discoverer, Mr. Richard Becker of Durango, who is exploring with great success the Coleopterous treasures of the interesting region near which he resides.

MACROPOIDES (p. 286).

Macropoides nietoi (p. 287).

To the Mexican localities given, add :—Atoyac, Monte verde (apud *Flohr*).

Macropoides mniszechi (p. 287).

To the Mexican localities given, add :—Atoyac (*H. H. Smith*, *Flohr*), Misantla (*Flohr*).

When fresh this fine species is of a beautiful bluish-green colour, which is soon lost after death. The Misantla specimens were cut out of tree-trunks by Mr. Flohr.

HETEROSTERNUS (p. 287).

Heterosternus buprestoides (p. 288).

The type specimen of this rare species, Mr. Flohr informs me, on the authority of M. Blanchard, was taken near Zongolica; a second example, he says, has been taken on an Aguacatillo tree between Huatusco and Mirador; and a third, now in the Philadelphia Museum, was obtained from Sumichrast, but in what locality it was found is not known.

PARISOLEA (p. 288).

Parisolea alba (p. 288).

Parisolea fulva, anteà p. 288, Tab. XVII. fig. 1.

The locality of this species is Jalapa, where it was cut out of old or felled Liquid-ambar trunks (*Flohr*).

P. fulva was founded on examples found in the manner above-mentioned, but curiously discoloured by being kept in a damp locality; it must therefore be withdrawn.

METAPACHYLUS (to precede the genus *Aspidolea*, p. 296).

Gen. *Pachylo* affinis, sed valde differt mandibulis longe exsertis recurvis acuminatis: Gen. *Rutelisc*æ quoque affinis a quo differt inter alia labro lato corneo. Oblongo-quadratus, convexus. Caput inerme, fronte paullo declive; clypeo semiovato, marginibus præcipue antico reflexis. Labrum latum, conspicuum, ab epistomatis basi exstans. Mandibulæ sicut in *Ancognatha* etc. recurvæ, acutæ. Mentum parte ligulari parva, triangulari. Antennæ 10-articulatæ, clava cæteris articulis conjunctis ♂ longiore, ♀ paullo breviore. Mesosternum inter coxas paullulum incrassatum. Pedes sat breves; tibiæ subcompressæ, setosæ, 4 posticæ margine apicali setuloso et extus late unidentato. Tarsi setosi; ungues graciles, æquales, exteriore in ♀ omnibus pedibus basin versus longe unidentato, in ♂ in pedibus 4 posterioribus validius unidentato, pedibus anticis ungue anteriore incrassato, a basi valde inflexo et apice valde inæqualiter fisso.

The interesting form on which this genus is founded partakes of the characters of *Pachylus*, *Oryctomorphus*, and *Parastasia*, with the allied Indian forms *Didrephanophorus*, *Peperonota*, &c., genera widely separated in the received classification. It has much also in common with the genus *Rutelisca*, which would be better placed in its vicinity than in the group Rutelina, the tarsal claws not being really unequal in length, their different curvature only making them appear so. The North-American genus *Polymæchus* apparently belongs to the same hitherto unindicated group of genera.

1. **Metapachylus sulcatus.** (Tab. XXIV. figg. 19 ♂, 20 ♀.)

Niger, politus, elytris macula utrinque juxta scutelli basin et interdum thoracis lateribus, femoribus apice maculaque frontali, flavo-testaceis, antennis et palpis piceo-rufis; clypeus et frons minute scabrosa; thorax transversus, sparsim punctulatus, linea dorsali lata impressa a basi ad apicem mediocriter rotundato-angustatus, tenuiter marginatus, linea impressa marginali basi medio late interrupta, angulis posticis

rectis sed apice obtusis ; elytra profunde punctato-sulcata, interstitiis convexis, margine laterali ♂ tenui, ♀ medio paullo incrassato. Pygidium ♂ ♀ latum, medio læve, lateribus longe piloso-punctulatis. Pectus, coxæ posticæ femoraque subtus fusco-nigro- vel obscure fulvo-villosa.
Long. 17–22 millim. ♂ ♀.

Hab. GUATEMALA, Tepan (*Conradt*).

Three examples, viz., two males, one female ; the female with imperfect hind tarsi, the claws of which are inferred to be toothed like the others.

ANCOGNATHA (p. 297).

Ancognatha quadripunctata (p. 298).

To the localities given, add :—GUATEMALA (*Conradt*).

CYCLOCEPHALA (p. 299).

Cyclocephala complanata (p. 301).

A single example, taken by Conradt at Coban in Vera Paz, is much larger than any of the other Mexican or Guatemalan examples I have seen, measuring 21 millim., the others ranging from 16 to 17 millim.

CHEIROPLATYS (p. 320).

Cheiroplatys isodonoides (p. 322).

To the Mexican localities given, add :—Amula in Guerrero 6000 feet (*H. H. Smith*).

GOLOFA (p. 332).

Golofa imperialis (p. 334).

To the localities given, add :—MEXICO, Amula 6000 feet, Soledad 5500 feet, and Xucumanatlan 7000 feet, in Guerrero (*H. H. Smith*).

A good series has been supplied by Mr. Smith, including one large example 50 millim. long, which is probably of the fullest development, and tends to establish the validity of the species. Its thoracic horn is only 10 millim. long (measured from the surface of the thorax behind it), but the apex is but very little dilated and angulated laterally and at the tip. In the largest males of *G. pizarro*, measuring 42 millim., the thoracic horn is fully 15 millim. long and very broadly dilated and tridentate at the apex. The elytral humeri are more often concolorous than black. The four female examples, all black, show a constant difference from *G. pizarro*, female, in the nearly smooth apical half of the pygidium and less rugosely punctured elytra.

ÆGOPSIS (p. 337).

Ægopsis curvicornis (p. 337).

Ægopsis westwoodii, Thoms. Mus. Scient. p. 17, t. 6. fig. 2[1].

M. Sallé informs me that the only other described species of this genus, *Æ. westwoodii*, Thoms., is not from the interior of Brazil as Thomson stated [1] but from Panama. This is confirmed by the fact that the slight differential features mentioned by Thomson are seen in at least one of our Panama examples.

ISCHNOSCELIS (p. 343).

Ischnoscelis dohrni (p. 343).

Mr. Flohr informs me that an example of this rare species has been taken at Tonila.

COTINIS (p. 346).

Cotinis mutabilis (p. 346).

Var. 2. *C. mexicana* (p. 346).

To the Mexican localities given, add:—Omilteme 8000 feet, Amula 6000 feet, Venta de Zopilote 2800 feet, and Xucumanatlan 7000 feet, all in Guerrero (*H. H. Smith*).

All these examples have a pointed clypeal horn.

Var. 8. *C. atrata* (p. 347).

Add to the Mexican localities:—Amula 6000 feet, and Venta de Zopilote 2800 feet, in Guerrero (*H. H. Smith*).

13 (A). **Cotinis salicis.** (Tab. XXIV. fig. 25.)

C. antonii affinis et simillima, sed valde differt thoracis lobo obtuso sat late truncato. Nigra, polita, pubescentia subtus nigra; caput quadratum, fronte late concava, punctata et nigro-setosa, carina centrali vix elevata et obtusa usque ad clypeum continuata ibique gradatim subsidente; clypeo lato, margine antico valde reflexo recto; thorace elytrisque, præcipue lateribus, sparsim punctatis. Pygidium strigulosum, plagis duabus cretaceis. Processus mesosternalis quam in *C. antonii* paullo longior, apice rotundato. ♂.
Long. 20 millim.

Hab. Mexico, near the city (*Flohr*).

In decayed willow-trees (*Flohr*).

13 (B). **Cotinis rufipennis.**

Cotinis —— ? (no. 18), anteà p. 353.

C. antonii affinis. Oblongo-quadrata, nigra, velutino-opaca, subtus (et capite) glabra polita, pectore pedibusque nigro-hirsutis, elytris (sutura angusta nigra excepta) miniato-rufis; clypeus sicut in *C. antonii* margine antico recto oblique reflexo, fronte quadrata, concava, sparsim punctata carinaque alta acuta longe ante clypei apicem subabrupte terminata; antennæ nigræ; thorax trapezoideus, sparse punctatus, disco lævi, ante medium paullo dilatatus, lobo basali mediocre, obtuse rotundato scutelloque conspicuo acute triangu-

lari; elytris absque sculptura opacissimis. Pygidium nitidum, glabrum, subtiliter sparse strigosum. Processus mesosternalis quadratus haud porrectus, antice truncatus.

♂. Tibiæ anticæ extus inermes, dente apicali obsoleto. Thorax apud marginem anticum medio paullo productus culminatus. Venter late concavus. Pygidium convexum, utrinque prope apicem late foveatum.

♀? Tibiæ anticæ extus dente unico brevi, dente terminali recte prolongato.

Long. 16–20 millim.

Hab. Mexico, Canelas in the Sierra Madre de Durango (*Becker*), Santa Clara in Chihuahua (*Höge*).

The example brought home by Herr Höge is much crushed, and I am not sure that it is a female, though it is broader and larger than the undoubted male specimen received from Mr. Flohr.

GYMNETIS (p. 353).

13 (a). **Gymnetis vandepolli.**

Gymnetis kerremansi, anteà p. 357, cum Tab. XXI. figg. 7, 8 (nec Van de Poll).

M. Van de Poll having sent me a drawing of *G. kerremansi*, I perceive that his is a species quite distinct from that which I described and figured from Chontales and Bugaba under this name, and which I now name as above. *G. kerremansi* will remain, therefore, with the locality "Panama" only.

Obs. G. wollastoni, Schaum, Trans. Ent. Soc. Lond. v. (1) p. 66, t. 8. f. 3, described as from Mexico, is a Venezuelan insect.

EUPHORIA (p. 362).

1 (a). **Euphoria monticola.**

♀. Oblonga, supra nitida, glabra, saturate viridis vel olivaceo-nigra, elytrorum lateribus maculis nonnullis cretaceis; clypeus quam in *E. lesueuri* paullo longior, lateribus paullo rotundatis, antice angustatus et subbidentatus cum fronte concavus, grosse punctatus, medio vertice obtuse carinato; thorax sat grosse discrete, disco subtilius et dispersius, punctatus, lateribus subrugosis, lobo basali subrecte truncato; scutellum læve; elytra utrinque valide bicostata, sparsim punctulata apicemque versus rugulosa, interstitio prope suturam postice plaga nigro-velutina; pygidium confluenter subtiliter rugulosum, nitidum, sparse incumbente pilosum. Subtus olivaceo-nigra, polita, cum pedibus tenuiter griseo-pilosa. Tibiæ anticæ tridentatæ.

Long. 18 millim. ♀.

Hab. Mexico, Canelas in the Sierra Madre de Durango (*Becker*).

A very distinct species allied to *E. lesueuri* and *E. candezei*.

Euphoria lineoligera (p. 366).

To the Mexican localities given, add:—Rincon 2800 feet, Mescala, and Venta de Zopilote 2800 feet, all in Guerrero (*H. H. Smith*).

Euphoria biguttata (p. 366).

To the localities given, add:—Mexico, Tepetlapa 3000 feet, and Acaguizotla 3500 feet in Guerrero (*H. H. Smith*).

Euphoria dimidiata (p. 367).

To the localities in Mexico, add:—Mescala, Chilpancingo 4600 feet, Rincon 2800 feet, Venta de Peregrino, Acaguizotla 3500 feet, all in Guerrero (*H. H. Smith*).

Euphoria pulchella (p. 367).

M. Sallé believes that there are two species mixed up in the varieties attributed by authors to *E. pulchella*, one in which the elytra are plane and another in which they are prominently bicostate. The two species would stand thus:—

13. **Euphoria pulchella.**

Elytra utrinque bicostata.

Cetonia pulchella, *C. ferrugata*, and *C. montesuma*, Gory & Perch.

13 (A). **Euphoria childreni.**

Elytra disco plana.

Cetonia children and *C. thelasco*, Gory & Perch.

The colour-varieties in the two species, though similar, do not exactly correspond; but according to our series of specimens the two forms occur together in many localities.

Euphoria subtomentosa (p. 373).

To the Mexican localities given, add:—Chilpancingo 4600 feet in Guerrero (*H. H. Smith*).

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[Names in small capitals refer to Families &c.; those in roman type to the chief reference to each species included in the work; those in italics to species incidentally mentioned, synonyms, &c.]

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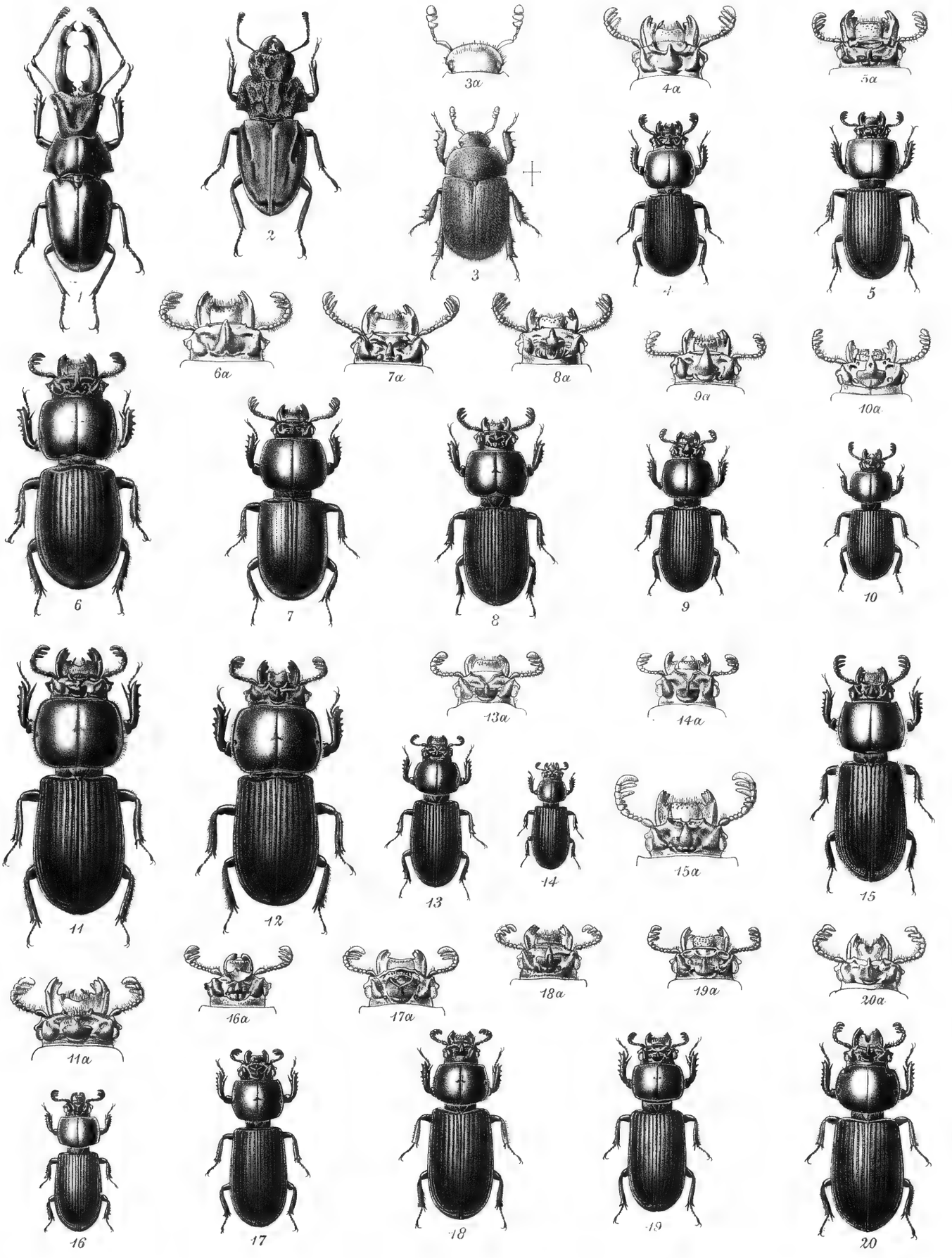

1♂,2♀ CANTHAROLETHRUS LUXERII. 3, 3a ÆSALUS NEOTROPICALIS. 4, 4a PROCULEJUS PUBICOSTIS. 5, 5a „ CHAMPIONI. 6, 6a OILEUS HEROS. 7, 7a OXYGES LÆVISSIMUS. 8, 8a TRIÆNURGUS SUBOPACUS. 9, 9a PSEUDACANTHUS (?) LATICORNIS. 10, 10a „ (?) JALAPENSIS. 11, 11a, 12 PLATYVERRES INTERMEDIUS. 13, 13a POPILIUS GRANULIFRONS. 14, 14a „ DEBILIS. 15, 15a NELEUS TLASCALA. 16, 16a RHODOCANTHOPUS SPINIGER. 17, 17a PHORONEUS JANSONI. 18, 18a SORANUS CHAMPIONI. 19, 19a VETURIUS CIRRATUS. 20, 20a VERRES CAVICOLLIS

W. Purkiss lith. Hanhart imp.

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Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
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W. Purkiss lith.

1 MEGATHOPA YUCATECA.
2 CANTHON SALLEI. "
3 " MONILIATUS. "
4 " ANGUSTATUS. "
5 MEGATHOPA CANDEZEI. "
6 CANTHON EURYSCELIS. "
7 " FEMORALIS. "
8 " LAMPRIMUS. "

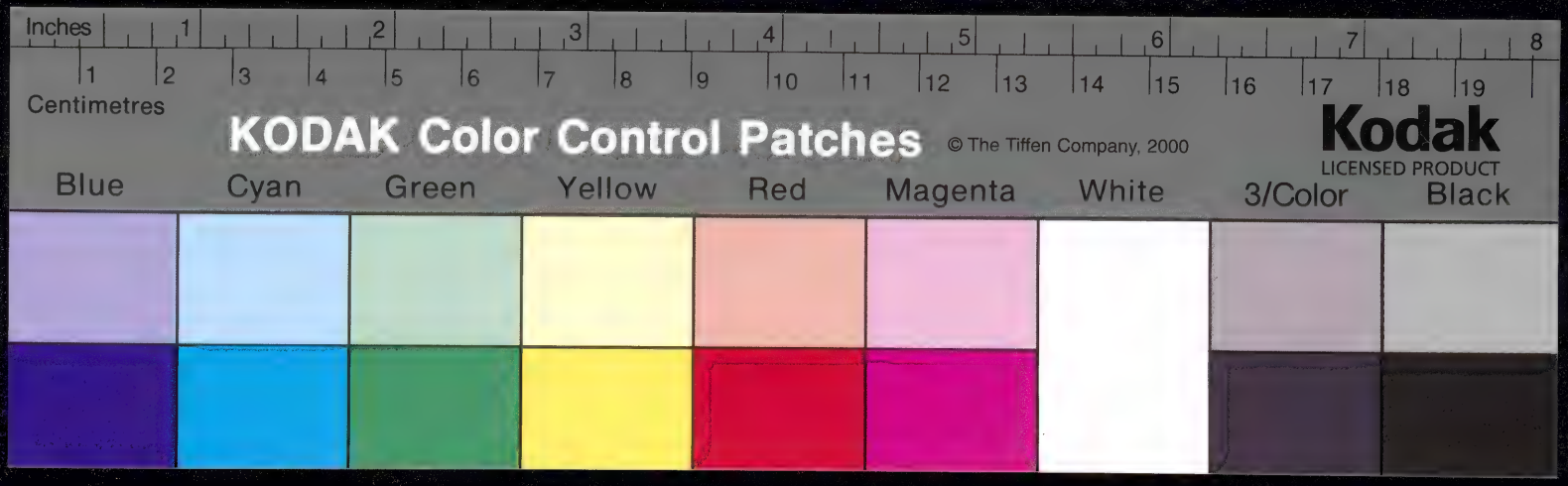
9 CANTHON RARIPILIS.
10 " FORRERI. "
11 " MUTABILIS, *var.* "
12 " LITURATUS, *var.* "
13♂ DELTOCHILUM LOBIPES. "
14♂ " PARILE. "
15♂ " ACROPYGE. "
16♀ " SCABRIUSCULUM. "
17 EURYSTERNUS VELUTINUS. "

18 EURYSTERNUS MAGNUS.
19 " ANGUSTULUS. "
20♂ AGAMOPUS LAMPROS. "
21 APHENGIUM SEMINUDUM. "
22 UROXYS MICROS. "
23 SCATIMUS OVATUS. "
24 CHAERIDIUM GUATEMALENSE. "
25 " AMPLIATUM. "

Hanhart imp. 453.

Coleoptera. Pl. II. Pl. 2. Tab. 2.

Biol. Centr.-Am.



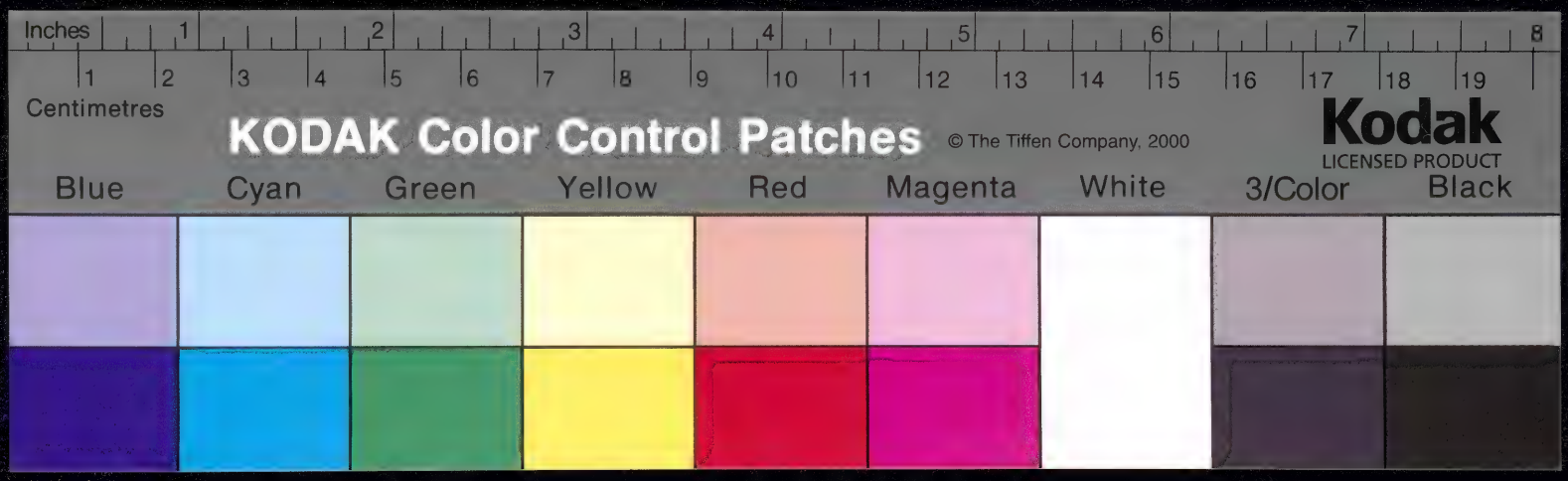
1 CANTHIDIUM HAROLDI.
2 " PUNCTICOLLE.
3 " AURIFEX.
4 " ANGUSTICEPS.
5, 5a, ♂ ONTHERUS MEXICANUS.
6 " BREVIPENNIS.
7♀ 8♀ PINOTUS COLONICUS.
W. Purkiss lith.

9♀ PINOTUS YUCATANUS
10, 10a " AMPLICOLLIS.
11, 11a COPRIS LAEVICEPS.
12, 12a♂ " SALLEI.
13, 13a♂ " REBOUCHEI.
14, 14a♂ " ARMATUS.

15, 15a♂ COPRIS INCERTUS.
16, 16a♂, 17♀ PHANAEUS CORYTHUS.
16, 18a♂ " PLUTO.
19, 19a♂ " BITIAS.
20, 20a♂ " NOCTIS.
21, 21a♂ " VELUTINUS.
22, 22a♂, 23♀ " PYROIS.
Hanhart imp.
452

Coleoptera. Pl. II. p. 1. Vol. 3

Rood Engr. Ithaca



1, 1a ♂ PHANÆUS MELAMPUS.
2, 2a ♂ " CHRYSEICOLLIS
3, 3a ♂ " AMETHYSTINUS
4, 4a ♂ " DAMOCLES.
5, 5a ♂ " QUADRIDENS.
6, 6a ♀ " " " var.
7, 7a ♂ " SCUTIFER.

8, 8a ♂ PHANÆUS HERMES.
9, 9a ♂ " ADONIS.
10, 10a ♂ " DAPHNIS.
11, 11a ♂ " TRIDENS.
12, 12a ♂ " FURIOSUS.
13, 13a ♂ " NIMROD.
14, 14a ♂ " EXIMIUS.
15, 15a ♂ " SALLÆI.

16, 16a ♂ PHANÆUS BELTIANUS.
17, 17a ♂ " WAGNERI.
18, 18a ♂ " MEXICANUS.
19, 19a ♂ " SCINTILLANS.
20, 20a ♂ " PILATEI.
21, 21a ♂ " DAMON.
22, 22a ♂ " MIRABILIS.

W. Purkiss lith.

Hannaert imp
460.

Sand Beetles of the Phanæus Group.

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Coleoptera. Plate II. Vol. 2.

Trans. Linn. Soc.

1a 2a 3a 4a 5a

1 2 3 4 5

6a 7a 8a 9a 10a

6 7 8 9 10

11a 12 13a 14a 15a

11 12 13 14 15

16a 17a 18a 19a 20a

16 17 18 19 20

21a 22a 23a 24 25a

21 22 23 24 25

CNITHOPHAGUS NITIDIOR. 10,10♂ ONTHOPHAGUS TAPIRUS. 17,17♂ ONTHOPHAGUS LECONTEI.
MARGINICOLLIS. 11,11♂,12♀ " SHARPI. 18,18♂,19,19♀ " CHAMPIONI.
ACUMINATUS. 13,13♂ " NASICORNIS. 20,20♂ " ORPHNOIDES.
CRINITUS, var. PANAMENSIS. 14,14♂ " DICRANIUS. 21,21♂ " LANDOLTI.
RHINOLOPHUS. 15,15♂ " MEXICANUS. 22,22♂ " LONGIMANUS.
BELORHINUS. 16,16♂ " GUATEMALENSIS. 23,23♂, 24♀ " CHRYSES.
PRAECELIENS. 26,26♂ " GAZELLINUS.

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
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Hanhart imp. 467.

1♀ ONTHOPHAGUS RUFESCENS. 10 APHODIUS SALLÆI. 18 APHODIUS CHARMIONUS.
2,2aδ " CORROSUS. 11 " AZTECUS. 19 " XANTHUS.
3,3aδ " CUROIDALIS. 12 " GLYPTUS. 20 " BIFRONS.
4,4aδ " CHEVROLATI. 13 " LATECRENATUS. 21 " FULIGINOSUS.
5,5aδ " TOTONICAPAMUS. 14 " EUPROSOPUS. 22 SAPROSITES COSSONOIDES.
6,6aδ " CYANELLUS. 15 " DUPLEX. 23 EUPARIA TUBERCULATA.
7,7aδ,8,8a♀ ONITICELLUS MONSTROSUS. 16 " PANAMENSIS 24 AIENIUS STRIGICAUDA.
9δ APHODIUS DUGESI. 17 " GUATEMALENSIS. 25 " SCALPTIFRONS.

Elect. Lemtr. Chin. Coleoptera. Pl. 1. Figs. 2. 3. 4. 5. 6.

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
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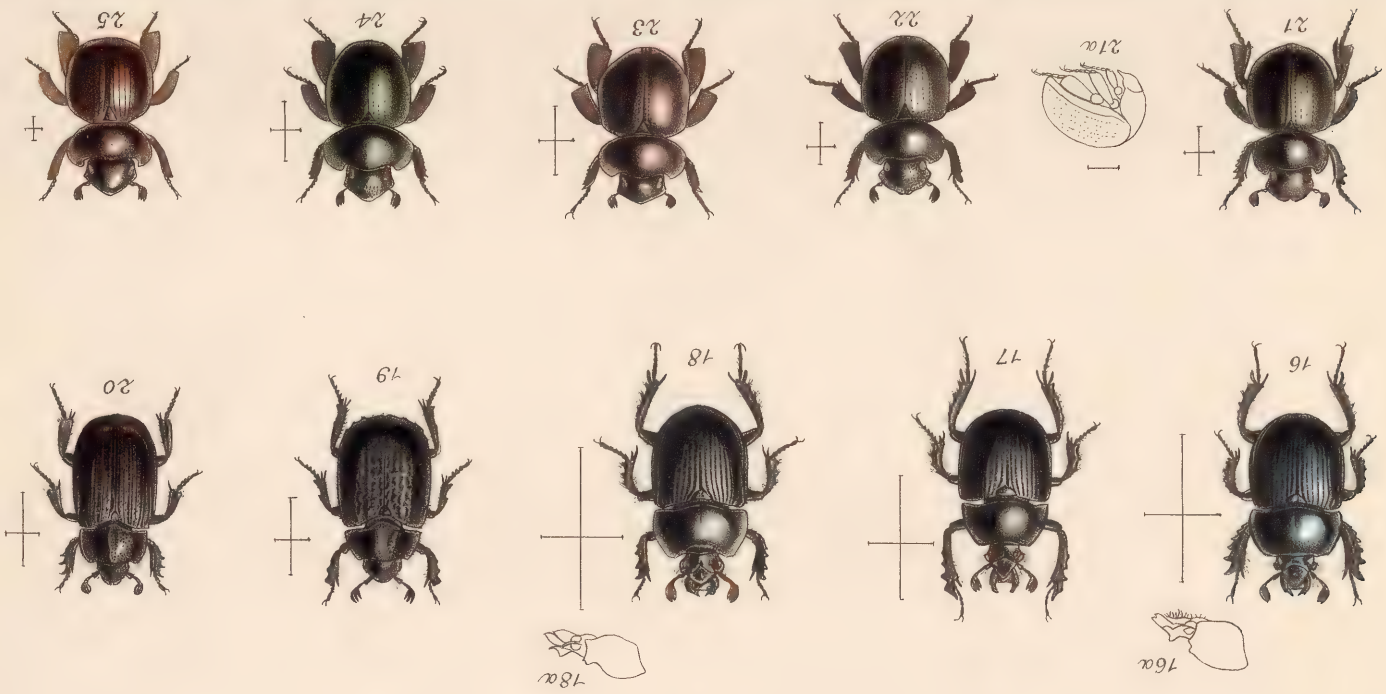
1,1a♂,2♀ ÆGIDIUM COLOMBIANUM,*var.* CRIBRATUM. 10,10a♂ BOLBOCERAS ARCUATUS. 18,18a♂ GEOTRUPES CAVICOLLIS.
3 OCHODÆUS SETULOSUS. 11,11a♂ GEOTRUPES FRONTICORNIS. 19 TROX ACANTHINUS.
4 " POLLICARIS. 12,12a♂ " STURMI. 20 ANAIDES SIMPLICICOLLIS.
5 CELODES CASTANEUS. 13,13a♂ " MNISZECHI. 21,21a CLEOTUS SINUATUS.
6,6a♂ ATHYREUS CHAMPIONI. 14♂ " SALLEI. 22 " BIDENS.
7,7a♂ " FISSICORNIS. 15♂ " HERBEUS. 23 ACANTHOCERUS EULAMPROS
8,8a♂ " TRIDENTICEPS. 16,16a♂ " GUATEMALENSIS. 24 " RELUCENS.
9,9a♂ BOLBOCERAS SALLEI. 17♂ " ONITIDIPES. 25 " ROTUNDICOLLIS.

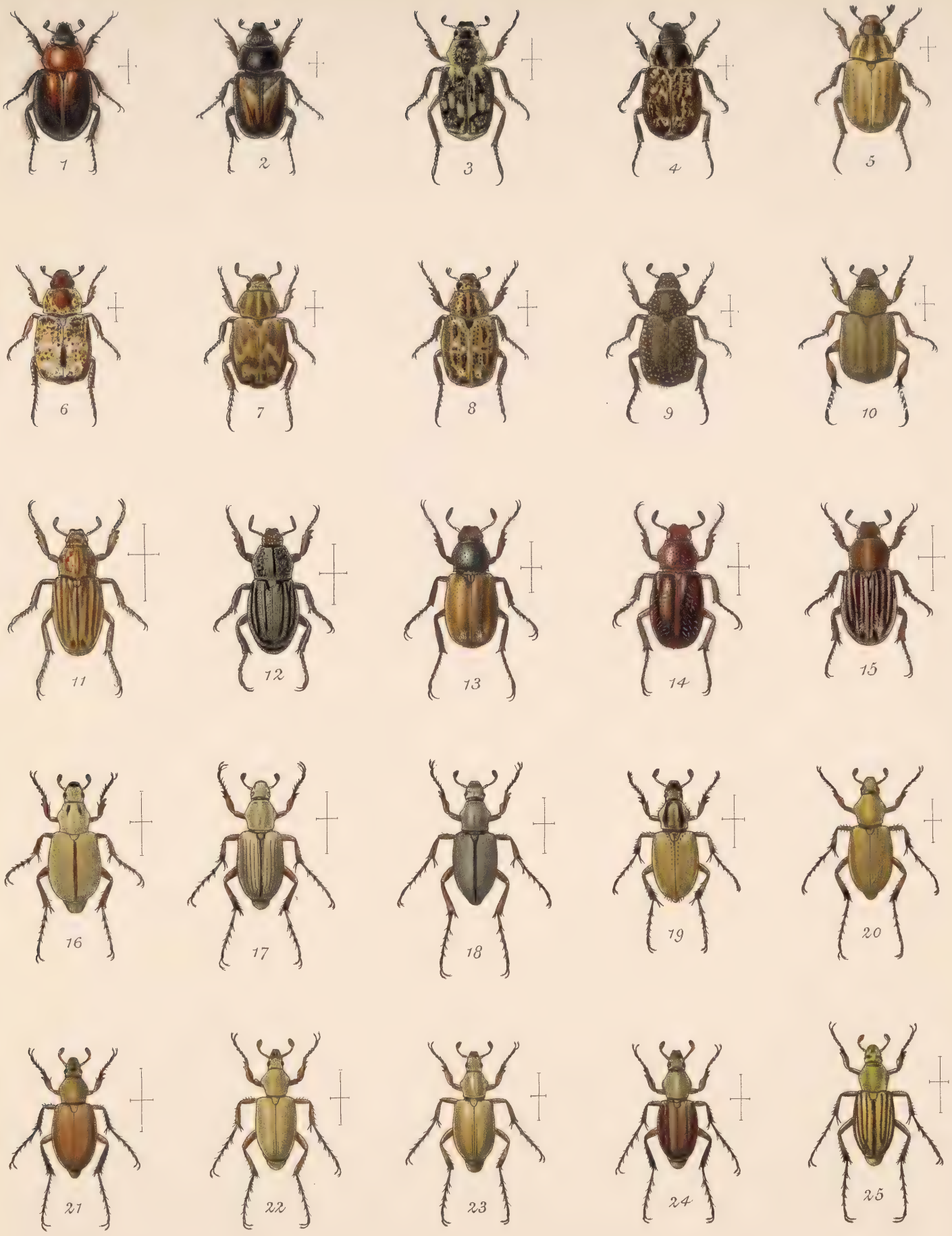
W. Purkiss lith.

Hanhart imp
470.



Coleoptera Pl. II. Pl. 2. Tab. 7

Insect. Centr.-Amer.



1♂ APOROLAUS FIMBRIATUS.
2 CHNAUNANTHUS DISCOLOR.
3 HOPLIA FESTIVA.
4 „ ASPERULA.
5♀ „ DISPARILIS.
6 „ CRETACEA.
7 „ ARGYRITIS.
8 „ SQUAMIFERA.
9 HOPLIA ALBISPARSA.
10 „ SURATA.
11 FAULA PILATEI.
12 „ CENTRALIS.
13 „ BRUNNIPENNIS.
14 „ HISPIDA.
15 „ VELUTINA.
16 MACRODACTYLUS VARIIPES.
17 „ MEXICANUS.
18 MACRODACTYLUS SILAONUS.
19 „ LINEATOCOLLIS.
20 „ FULVESCENS.
21 „ OCREATUS.
22♂ „ RHOMBODERUS.
23 „ ZUNILENSIS.
24 „ SERICEICOLLIS.
25 „ LINEATUS.

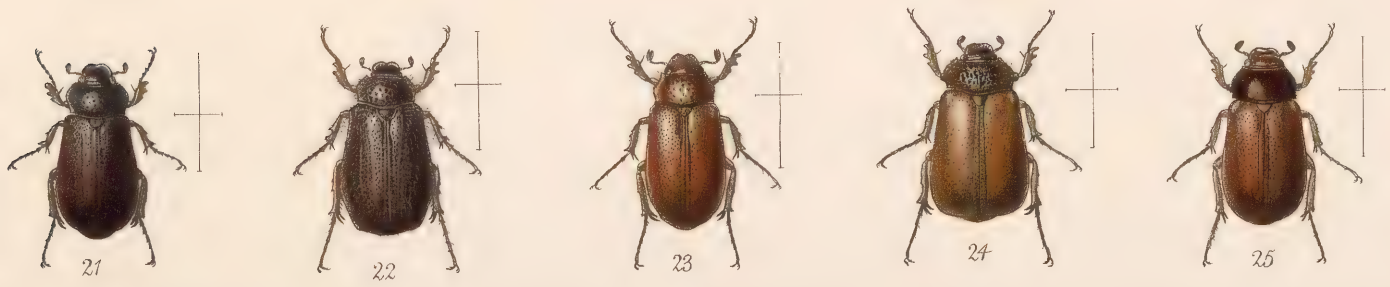
W. Purkiss lith. Hannart imp. 477.

1 MACRODACTYLUS SUAVIS.
2 » SERICINUS.
3 » SYLPHIS.
4 » RUFESCENS.
5 » CHAMPIONI.
6 » OVATICOLLIS.
7 » THORACICUS.
8 » VIRENS.
9 » MURINUS.
10 ISONYCHUS OCELLATUS.
11 » » *,var.*
12 » » *,var.*
13 » » *,var.* PIPERITUS.
14♀ » PICTUS.
15♂ » PARADOXUS.
16 BARYBAS AURITUS.
17 PSEUDOSERICA MICANS.
18 PSEUDOSERICA INTEGRATA.
19 LIOGENYS MACROPELMA.
20 » PUBISTERNIS.
21 » PUBEREUS.
22 DIPLOTAXIS PILIFERA.
23 » CLYPEATA.
24♂ » TRAPEZIFERA.
25 » CORROSA, *var.* PACHUCANA.
26 » FLAVISETIS.

W. Purkiss lith.

Hanhart imp.
479.

KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches



1♂ CHLÆNOBIA ÆGROTA.
2♂ CHIRODINES ZUNILENSIS.
3♂ LISTROCHELUS CAVATUS, *var.* DURANGOENSIS.
4♂ „ MICROS.
5♂ „ PRÆSIDII.
6♂ „ MAXIMUS.
7♂ „ OBLONGULUS.
8♂ PHYTALUS COMETES.
9♂ PHYTALUS MACROCERUS
10♂ „ PLATYRHINUS.
11♂ „ BATILLIFER.
12♂ „ HÖGEI.
13♂ „ PENTAPHYLLUS.
14♂ „ XANTHOCOMUS.
15♀ „ BUCEPHALUS.
16♀ „ LINEATUS.
17♀ „ STRAMINEUS.
18♂ LACHNOSTERNA CASTANIELLA.
19♂ „ HETERONYCHA.
20♂ „ PICEOLA.
21♀ „ SCABRIFRONS.
22♂ „ LEONINA.
23♂ „ CRIBRICOLLIS.
24♀ „ RUGICOLLIS.
25♂ „ PUNCTULICOLLIS.

W. Parkiss lith.

Hanhart imp.
485

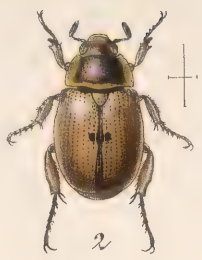
KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches

1♂	LACHNOSTERNA	RAVIDA.	9♀	LACHNOSTERNA	STURMI.	17♂	LACHNOSTERNA	NIGERRIMA.
2♂	„	ANOMALOIDES.	10♂	„	GIGANTEA, *var.*	18♂	„	MISTECA, *var.*
3♂	„	MACROPHYLLA.	11♂	„	SETIFERA.	19♂	„	MULTIPORA.
4♂	„	DASYPODA.	12♂	„	RUGIPENNIS.	20♂	„	MEXICANA.
5♂	„	POLYPHYLLA.	13♀	„	HEMILISSA.	21	EUGASTRA	CRIBROSA.
6♂	„	TESTACEIPENNIS.	14♂	„	SCHIZORHINA.	22♂	POLYPHYLLA	DECEMLINEATA.
7♂	„	RORULENTA.	15♂	„	RUGULOSA.	23♂	„	PETITI.
8♀	„	CINNAMOMEA.	16♂	„	MOLOPIA.	24♂	„	HAMMONDI.

W. Purkiss lith. Hanhart imp. 488.

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8

1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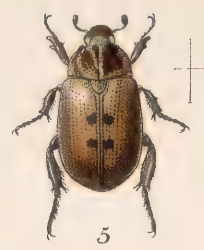
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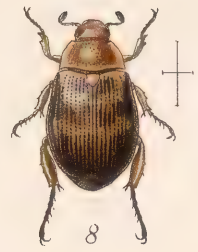
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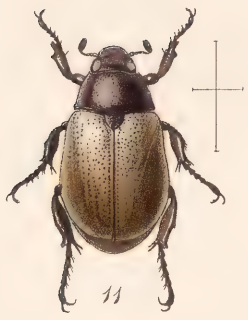
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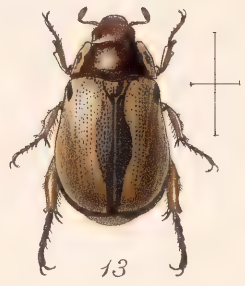
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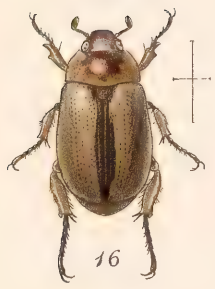
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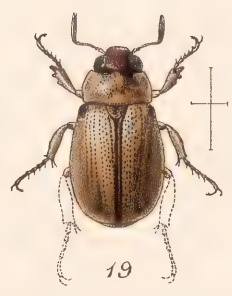
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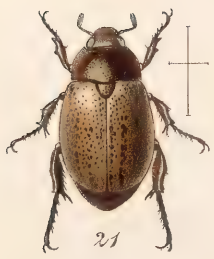
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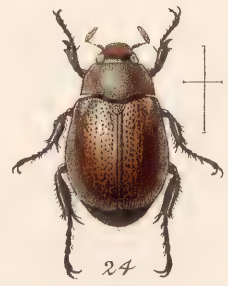
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25

1♂ PHYLLOPERTHA TOLUCANA.
2 ANOMALA DISCOIDALIS.
3 „ GUATEMALENA, *var.*
4 „ EULISSA.
5 „ COMPRESSICOLLIS.
6 „ CALLIGRAPHA.
7 „ CRIBRICEPS.
8 „ ZAPOTENSIS.

9 ANOMALA HISTRIONELLA.
10 „ CHAMPIONI.
11 „ OCHROGASTRA.
12♂ „ FLAVIZONA.
13♀ „ HÖPFNERI.
14 „ INCONSTANS.
15 „ GEMELLA.
16 „ CHEVROLATI.
17 „ DENTICOLLIS.

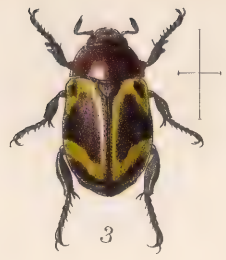
18 ANOMALA FLAVILLA.
19 „ MEGALOPS.
20♀ „ HISPIDULA.
21 „ FORAMINOSA.
22 „ IRRORATA.
23 „ ATOMOGRAMMA.
24♂ „ AMPHICOMA.
25 „ SEMITONSA, *var.*

W. Purkiss lith. Hanhart imp. 492.

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT Blue Cyan Green Yellow Red Magenta White 3/Color Black Centimeters Inches

1

2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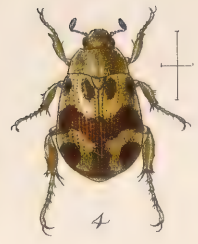
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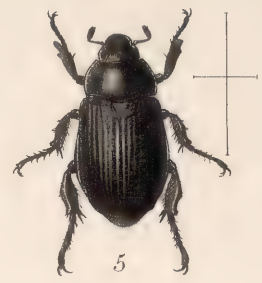
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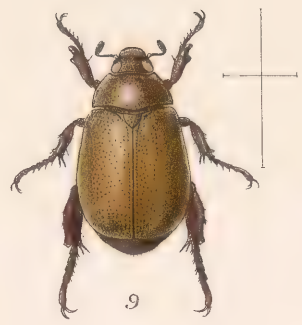
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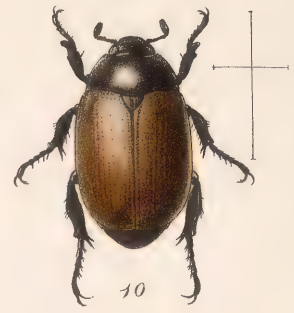
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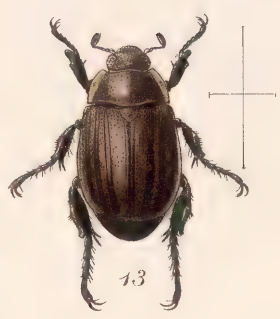
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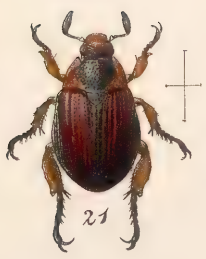
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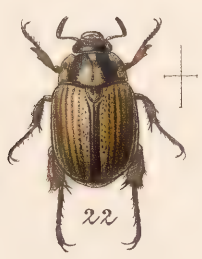
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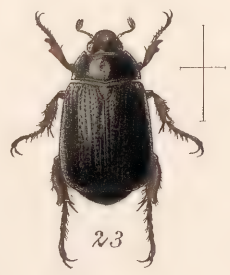
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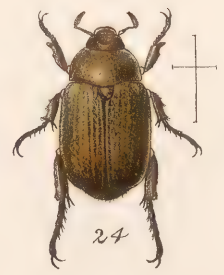
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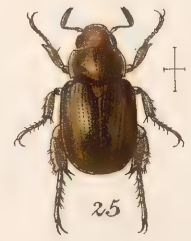

25

1	ANOMALA	SYLPHIS.	9	ANOMALA	MEGALIA.	18	ANOMALA	PHOSPHORA.
2	„	LÆSICOLLIS.	10	„	PRÆCELLENS.	19	„	VILLOSELLA.
3	„	DORYPHORINA.	11	„	PLURISULCATA.	20	„	MICANS.
4	„	CHRYSOMELINA.	12	„	GRANULIPYGA.	21	„	NUTANS.
5	„	SULCANS.	13	„	VALDECOSTATA.	22	„	RHIZOTROGOIDES.
6	„	RHODOPE.	14	„	NITESCENS.	23	„	CASTANICEPS.
7	„	FORRERI.	15	„	CALONOTA.	24	„	CARINIFRONS.
8	„	CUPRICOLLIS, *var.* COAGULATA.	16	„	SPECULARIS.	25	„	ATTENUATA.
			17	„	CHRYSANTHE.			

W. Purkiss lith

Hanhart imp

493.

KODAK Color Control Patches

© The Tiffen Company, 2000

Kodak LICENSED PRODUCT

Blue Cyan Green Yellow Red Magenta White 3/Color Black

Centimeters

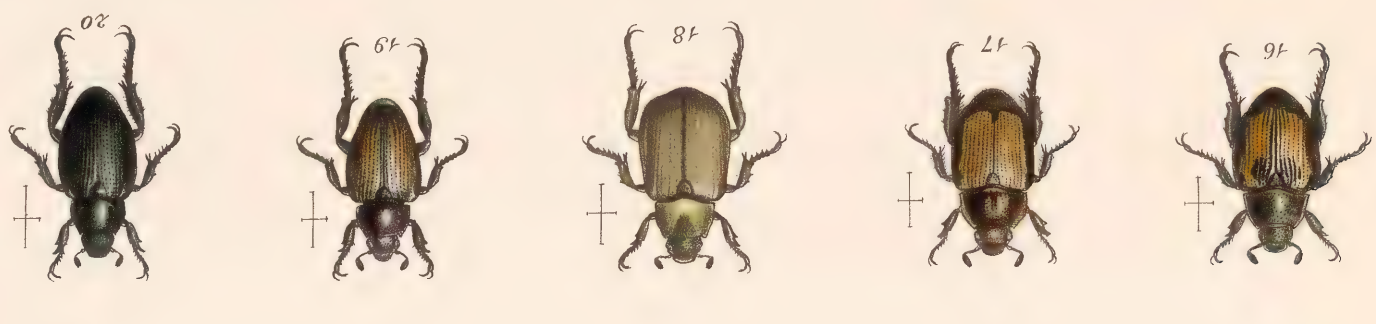
Inches

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,2 ANOMALA VIDUA.
3 " EPECTINASPIS MEXICANA.
4 " PICTIPENNIS.
5 " OPACICOLLIS.
6 " CHELIFERA.
7 " MORELETIANA.
8 STRIGODERMA INTERMEDIA.
9 " SALLEI.
10 " LONGICOLLIS.
11 " CONTRACTA.
12 " PHYSOPLEURA.
13♀ " CASTOR.
14 " ORBICULARIS.
15 " NIGRIPENNIS.
16 " RUTELINA.
17 STRIGODERMA TEAPENSIS.
18 " TOMENTOSA.
19,20 " LAMPRA.
21 " COSTULIPENNIS.
22 " AURIVENTRIS.
23,24 CALLIRHINUS METALLESCENS.
25 DILOPHOCHILA BOLACOIDES.

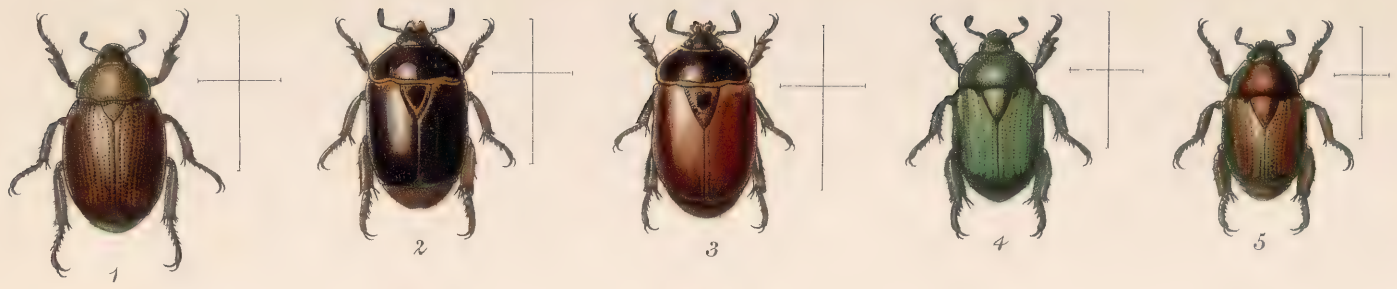
W.Parkiss lith.

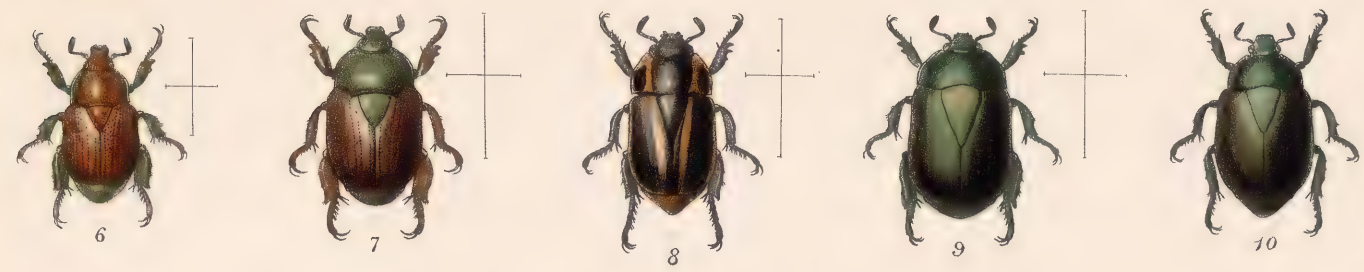
Hanhart imp. 495.

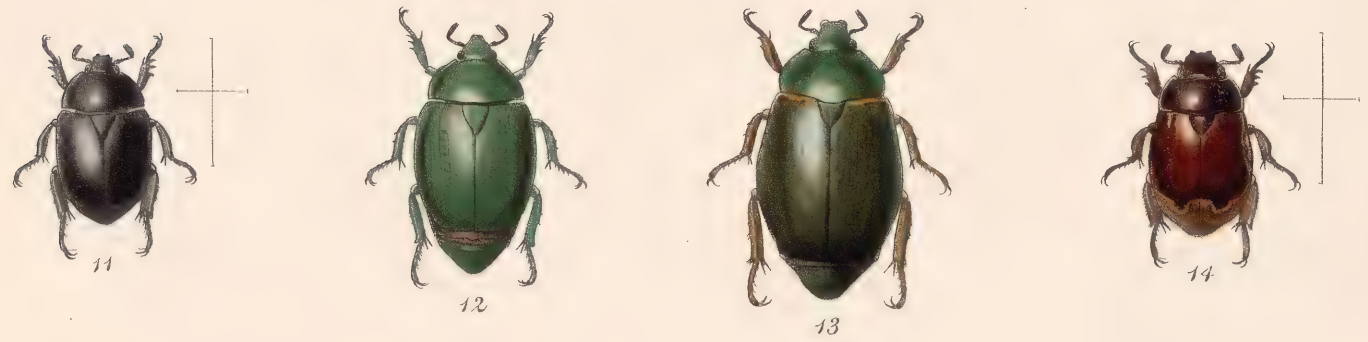


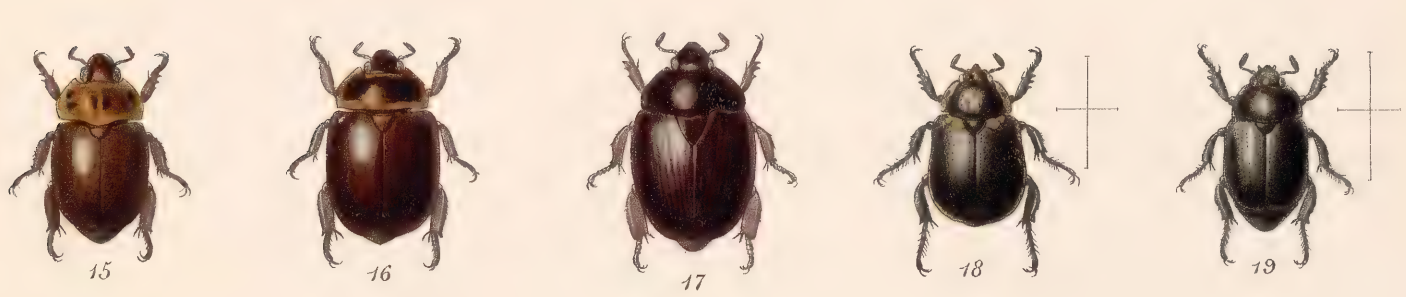
Scol. Genera. Atm.

Coleoptera. Tab. II. Fig. 2. Tab. 14.









1 PLATYRUTELA CRIBRATA.
2 LAGOCHILE CIRCUMDATA.
3 „ CHIRIQUINA.
4 CALOMACRASPIS SPLENDENS.
5 „ „ ,*var.*
6 „ CONCINNA.
7 „ HAROLDI.
8 ANTICHIRA CATOMELÆNA.
9 ANTICHIRA RUFONITIDA.
10 „ HIRTIVENTRIS.
11 „ IODIELLA.
12 PTENOMELA GRATIOSA.
13 THYRIDIUM SEMICINCTUM.
14 CHLOROTA TERMINATA.
15 „ FLAVICOLLIS.
16♂ CHLOROTA CINCTICOLLIS.
17 „ (?) BELTI.
18♂,19♀ RUTELISCA FLOHRI.
20 RUTELA SPECULARIS.
21 CNEMIDA ATERRIMA.
22 PELIDNOTA BELTI.
23 „ NOTATA.
24 „ PROLIXA.

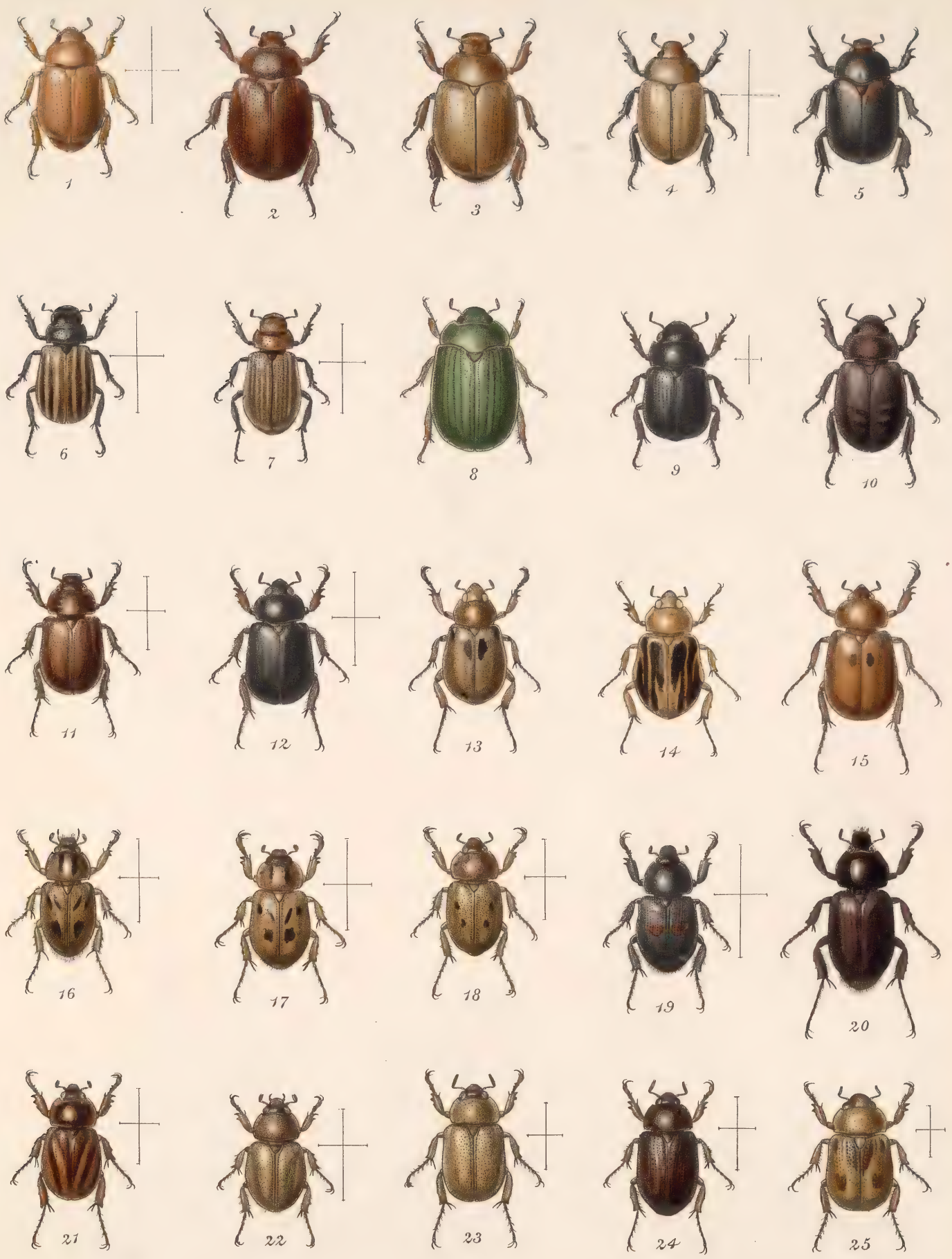
W. Purkiss lith

Hanhart imp
496.

1♀ PELIDNOTA COSTARICENSIS.
2♀ „ VIRESCENS.
3 „ „ *r.* CHALCOPUS.
4 „ „ *r.* JALAPENSIS.
5 „ „ *r.* AURESCENS.
6 „ STRIGOSA.
7 „ PUNCTULATA.
8 PLUSIOTIS CHALCOTHEA.
9 PLUSIOTIS CHRYSARGYREA.
10 „ OPTIMA.
11 „ MARGINATA.
12 „ AURORA, *r.* CHRYSOPEDILA.
13♂ „ VICTORINA.
14 „ COSTATA.
15♀ „ „ „ *, var.*
16♂ PLUSIOTIS CHLOREIS.
17 „ ADELAIDA.
18♂ HETEROSTERNUS RODRIGUEZI.
19 PLUSIOTIS LECONTEI.
20♀ MACROPOIDES NIETOI.
21♂ COTALPA AURESCENS.
22♂ „ NIGROÆNEA.
23♂, 24♀ PARACHRYSINA TRUQUI.

W. Purkiss lith.

Hanhart imp.
499.



1 PARISOLEA FULVA.
2 BYRSOPOLIS LANIGERA.
3 PHALANGOGONIA LACORDAIREI.
4 „ PARILIS.
5 „ CHAMPLONI.
6 BOLAX MAGNUS.
7 „ FLAVEOLUS.
8 PLATYCŒLIA HUMERALIS.

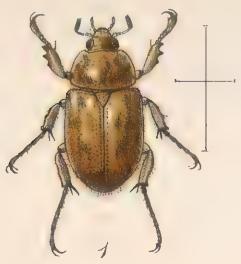
W Purdey - lith

9 LEUCOTHYREUS FEMORATUS.
10♀ SPODOCHLAMYS CUPREOLA.
11♂ ASPIDOLEA SINGULARIS.
12♂ ANCOGNATHA ÆQUATA.
13♂ „ HUMERALIS.
14♀ „ „ , *var.*
15♂ „ QUADRIPUNCTATA.
16♂ CYCLOCEPHALA DETECTA.
17♂ „ STICTICA.

18♂ CYCLOCEPHALA MICROSPILA.
19♂ „ FASCIOLATA.
20♂ „ FULIGINEA.
21♂ „ COMPLANATA.
22♂ „ SORORIA.
23♂ „ COAHUILÆ.
24♂ „ CASTANIELLA.
25♂ „ CURTA.

Hanhart imp.
502.

KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches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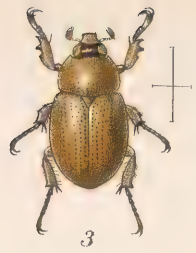
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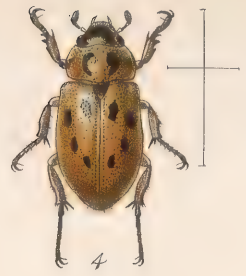
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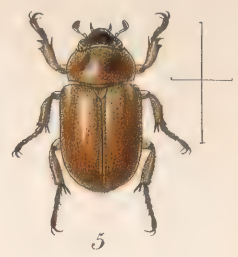
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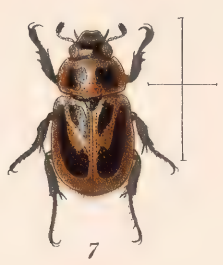
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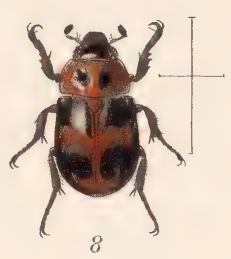
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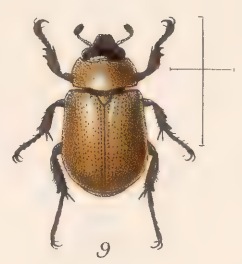
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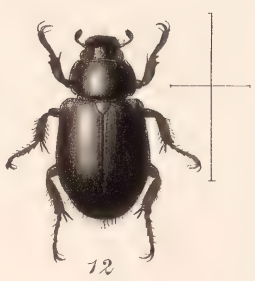
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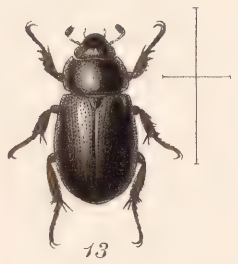
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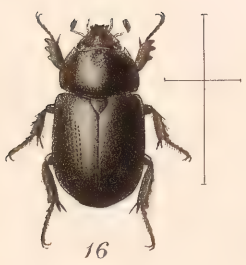
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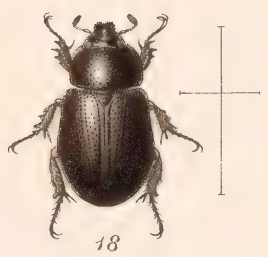
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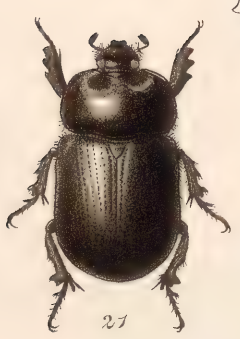
21a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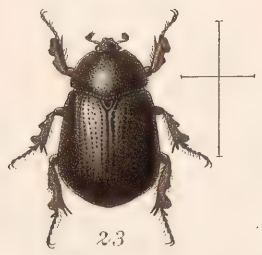

23

24

25a

25

1♂ CYCLOCEPHALA COMATA.
2♀ " GUTTATA.
3♂ " OVULUM.
4♂ " LUCIDA.
5♂ " AMBLYOPIS.
6♂ " MAFAFFA.
7♂ " PICTA.
8♂ " CONSPICUA.

9♂ CYCLOCEPHALA ATRIPES.
10♂ " LIGYRINA.
11♀ " PROBA.
12♂ " NIGERRIMA.
13♂ DYSCINETUS FRATER.
14 EUETHEOLA HUMILIS.
15 LIGYRUS LATIFOVEA.

16♂ LIGYRUS LÆVICOLLIS.
17♂ " NASUTUS.
18 " SALLÆI.
19♂, 20♂ CHEIROPLATYS CULTRIPES.
21, 21a♂ XYLORYCTES LOBICOLLIS.
22♀ BOTHYNUS QUADRIDENS.
23♂, 24♀ CHEIROPLATYS FAIRMAIREI.
25, 25a♂ XYLORYCTES THESTALUS.

W. Purkiss lith.

Hannart imp.
508.

KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1a♂ XYLORYCTES FURCATUS. 7,7a♂HETEROGOMPHUS CHEVROLATI. 13,13a♂ENEMA ENDYMION.
2,2a♂ » » 8,8a♀ » » 14,14a♂ STRATEGUS JULIANUS.
3,3a♂ » TEUTHRAS. 9,9a♂ » » ,r. EURYTUS. 15,15a♂ » »
4,4a♂ » TELEPHUS. 10,10a♂DEMONOPLUS MNISZECHI. 16,16a♂ PODISCHNUS AGENOR.
5,5a♂ » » ,r. ENSIFER. 11♀ » » 17,17a♂ » »
6,6a♂ NEGACERAS PHILOCTETES. 12,12a♂ENEMA PAN,r LUPERCUS 18,18a♂ » »
W.Purkiss lith ,r. SEPTENTRIONIS. 19♀ » » Hanhart imp. sil.

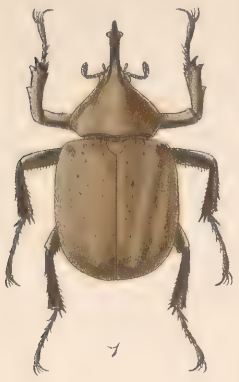
Scol. Geotr. &c. Coleopt. pl. II, 2. Tab. 19

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

1,1♂ PODISCHNUS TERSANDER. 7,7♂ GOLOFA PIZARRO, r. CLAVICORNIS. 14,14♀ GOLOFA CHAMPIONI.
2,2♀ " " 8,8♂ IMPERIALIS. 15,15♂ PHILEURUS CYLINDROIDES.
3,3♂ GOLOFA PIZARRO. 9,9♂ " " 16,16♂ GOLOFA IMBELLIS.
4,4♂ " " , r. CLAVICORNIS. 10,10♂ " " 17,17♂ DYNASTES HYLLUS.
5,5♂ " " " " 11,11♂ " COSTARICENSIS. 18,18♀ GOLOFA IMBELLIS.
6,6♂ " " " " 12,12♂ " CHAMPIONI. 19,19♂ PHILEURUS DEJEANI.
" " " " 13,13♂ " " "

W. Hurtress, lith.

Hanhart, imp. 512.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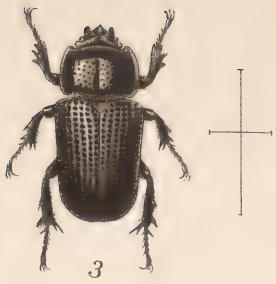
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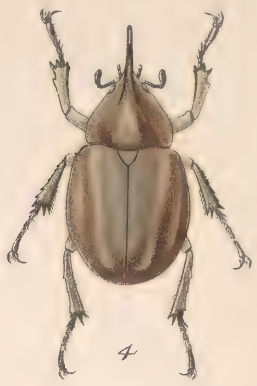
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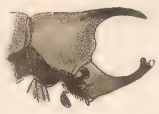
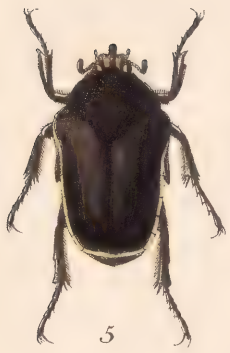

1a

4a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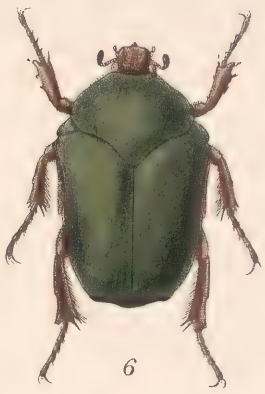
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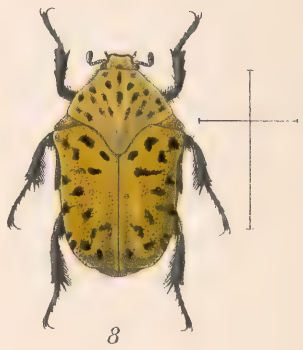
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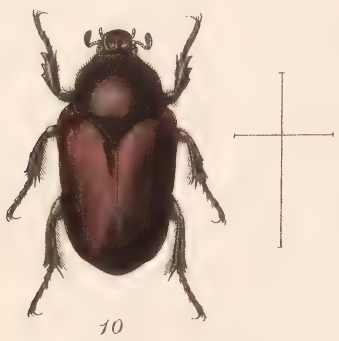
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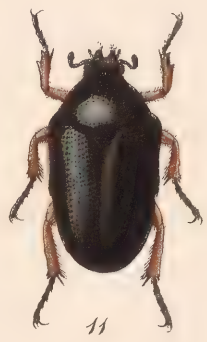
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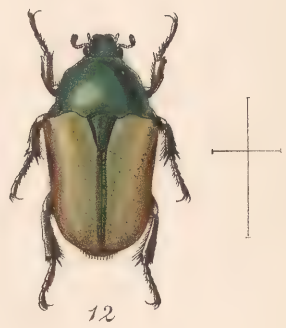
12

13

14

15

16

17

1, 1a♂ LYCOMEDES MNISZECHI.
2♂ AMBLYODUS TAURUS.
3♂ PHILEURUS LÆVICAUDA.
4, 4a♂ LYCOMEDES BELTIANUS.
5 COTINIS MUTABILIS, *var.* CUPRASCENS.
6 COTINIS LEBASI.
7, 8 GYMNETIS KERREMANSI.
9 AMITHAO CAVIFRONS.
10 COTINIS OLIVIA.
11 AMITHAO HÆMATOPUS.
12 CHLORIZANTHE FLAVIPENNIS.
13 GYMNETIS DIFFICILIS.
14 COTINIS ADSPERSA.
15♂ ARGYRIPA ANOMALA.
16 GYMNETIS CHEVROLATI, *var.* RAMULOSA.
17♀ ARGYRIPA ANOMALA.

W. Purkiss lith. Hanhart imp. 510.

KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8

Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black

W. Purkiss lith.

Hanhart imp.
815

1,1a♂ CHIRIQUIBIA INSIGNIS.
2,2a♂ ARGYRIPA SUBFASCIATA.
3,3a♂ " " ,var.
4,4a♀ COTINIS MUTABILIS,v.AURANTIACA.
5,5a♂ " ,v.INTERGENEA.
6,6a♀ " LATICORNIS.
7 GYMNETIS ARGENTEOLA.
8 " MARGARITIS.
9,9a♂ COTINIS PUNCTATOSTRIATA.
10♂ " PULVERULENTA.
11,11a " PUEBLENSIS.
12,12a " MUTABILIS,v.MALINA.
13 " PAUPERULA.
14 GYMNETIS RADICOLLIS.
15 " CALLISPILA.
16 " STELLATA.
17 AMITHAO ALBOPICTUS.
18 " PYRRHONOTUS.
19 " ERYTHROPUS.

Scarabaeidae. Pl. II Fig. 2. Tab. 22.

1 1a 2 2a 3 3a 4 4a 5 5a 6 6a 7 8 9 9a 10 11 11a 12 12a 13 14 15 16 17 18 19

1 EUPHORIA IRIDESCENS.
2 „ BIGUTTATA.
3 „ CANDEZEI.
4 „ LINEOLIGERA.
5 „ MYSTICA.
6 „ PULCHELLA.
7 EUPHORIA FULVEOLA.
8 „ AVITA.
9 „ „ ,*var.*
10 „ CHONTALENSIS.
11 GYMNETIS CHONTALENSIS.
12 „ COTURNIX, *var.*
13 CŒLOCRATUS ÆNESCENS.
14 GENUCHINUS V-NOTATUS.
15 TRIGONOPELTASTES SALLÆI.
16 „ „ ,*var.*
17 DIALITHUS MAGNIFICUS.
18 TRIGONOPELTASTES SALLÆI, *var.*

W. Purkiss lith.

Hanhart imp.